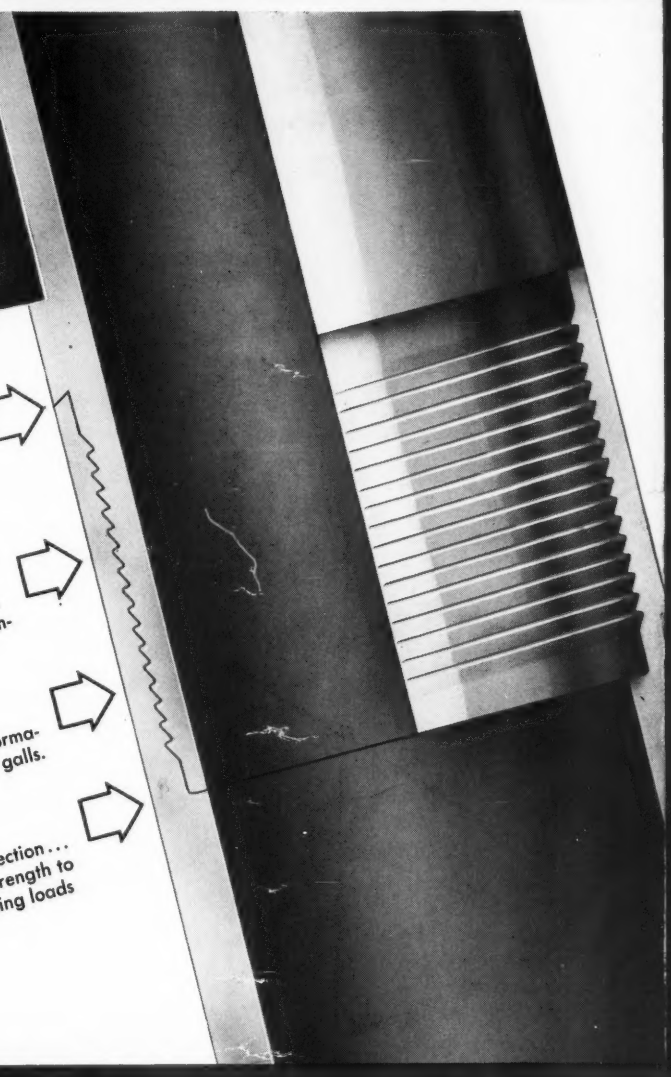
JUL 20 1944

CALIFORNIA
OIL WORLD

THE
SECURITY
FLUSH JOINT THREAD



FOUR FEATURES SAVE PIPE COSTS

BEVELED OUTER SHOULDER
Prevents "belling" under peak torque loads... draws threads into closer engagement... forms extra support at base of pin... provides a secondary fluid seal.

LONG, TAPERED THREADS
Automatically centralize when stabbed.. form a tight contact surface... practically eliminate joint injury on make-up.

NO SHARP CORNERS
Round, smooth thread corners prevent formation of metal slivers... eliminate thread galls.

SECONDARY SHOULDER
Provides a seat for the end of pin section... holds joint rigid... gives maximum strength to resist compression, torsion and bending loads

The Security Flush Joint Thread is economical, efficient and has been thoroughly tested under laboratory and field conditions. It is available in both SECURALOY and steel pipe in a wide range of popular sizes. The Thread can be easily reproduced in field shops to a high degree of accuracy—an important feature in overseas operations.

Write for Security Bulletin 1-A. Contains 20 pages of information describing the unique features of the Security Flush Joint Thread, together with Engineering Test Data and Charts.

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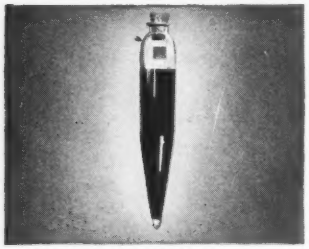
TWICE MONTHLY • FIRST ISSUE • JULY, 1944

EFFICIENT DEHYDRATING METHODS SHOULD PROVIDE THESE ADVANTAGES:

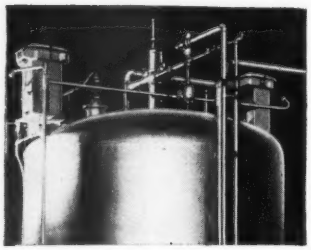
A *Lowest possible "cut." Minimum BS&W*



PETRECO DOES!

Petreco's varied electrodes, designed to treat effectively the many types of crude oil produced, insure efficient dehydration.

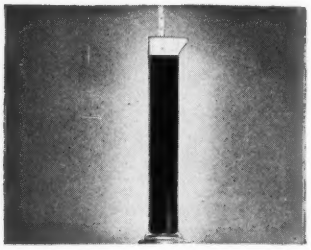
B *No loss of volume*



PETRECO DOES!

Petreco's vapor tight flow system prevents escape of more volatile fractions, thereby conserving the volume of oil produced.

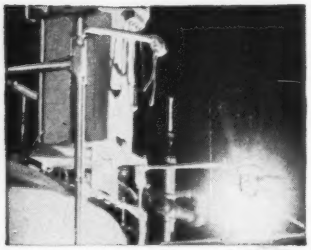
C *No API gravity loss*



PETRECO DOES!

Petreco's conservation of light ends holds the crude oil at its true gravity—this often enables the crude to command a better price.

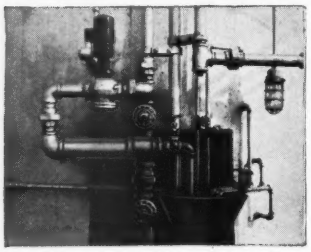
D *A constant performance indicator*



PETRECO DOES!

Petreco's "Pilot Light" tells the operator at a glance just how the unit is performing—when the light is bright, the oil is "clean".

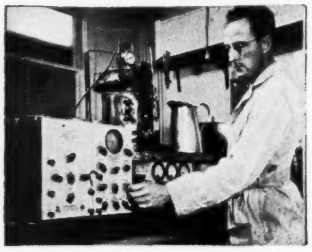
E *Automatic operation*



PETRECO DOES!

Petreco's automatic features allow the treaters to function virtually without attention, requiring only a minimum of the operator's time.

F *Complete field and laboratory service*

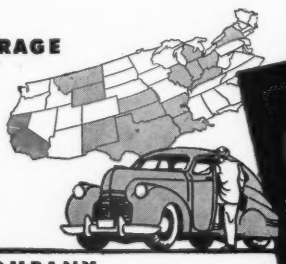


PETRECO DOES!

Petreco's field engineers are always available for service. Research technicians will gladly consult on emulsion problems.

COMPLETE OIL STATE COVERAGE WITH PETRECO PROCESS

Resident field engineers are located in refining and producing centers wherever Petreco processes are in use. These men are specialists, and are always available to assure maximum operating efficiency, and to give helpful advice and assistance on any problem of dehydration or desalting.



PETROLEUM RECTIFYING COMPANY
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5121 So. Wayside Dr., Houston 1, Texas
648 Edison Building, Toledo 4, Ohio
Representatives in principal production and refining centers

DEHYDRATING DESALTING

CALIFORNIA
OIL WORLD

PUBLISHED TWICE A MONTH
FOR TIMELY, COMPLETE
CALIFORNIA OIL NEWS COVERAGE

• FIRST ISSUE
JULY, 1944
VOL. 37 • NO. 13
WHOLE NO. 1660

PETROLEUM PUBLISHERS, INC.
MEMBER AUDIT BUREAU OF CIRCULATIONS
W. C. MONROE—President and Editor •
V. W. HEINZERLING—Manager News Service

117 WEST 9TH STREET
LOS ANGELES 15, CALIFORNIA
KINZIE MILLER—Vice President

California Oil World is published twice a month at 117 West 9th St., Los Angeles 15, California. Entered as Second-Class Matter, April 29th, 1944, at the post office at Los Angeles, California, under the Act of March 3, 1879. Subscription price $1 per year in U. S. and possessions, $2 in foreign countries, including Canada. Member of the Audit Bureau of Circulations.

July 14, 1944
Telephone Number TUcker 2571

Carrington Lung

With Congress scurrying out to Chicago for the Republican convention or back home to show cause to the voters why individual members should be reelected in November, the Nation's Capital suffered its quadrennial relapse into relative listlessness and ceased, temporarily, to be the No. 1 source of news.

The current siesta is giving the industry an opportunity to take stock of itself. And, of course, the work of Government agencies concerned with the problem of production and distribution of petroleum products at home and at the fighting fronts continues without let-up.

The accent, at present, is on the unprecedented and unexpected demand for 100 octane gasoline,—the result of Allied air force activity over the invasion front. Failure of the Luftwaffe to appear in anything like the strength that had been anticipated; Allied air operations of an almost unbelievable magnitude and the over-all demand for aviation gasoline created by the pleasant surprise of having more American and British planes in action after the start of the invasion than military experts had dared hope for,—all these factors stepped up the demand for 100 octane to a point where a 50% increase in shipments of the fuel has been requested by Commanding Generals in combat theatres.

On June 29, the Petroleum Administration for War summoned 55 U. S. refiners to Washington for an off-the-record conference with military leaders and key officials of PAW. Previous to the meeting, Bruce K. Brown, Assistant Deputy Petroleum Administrator, notified all 100 octane producers that "serious reductions in combat theatre stocks" made it necessary to bend every effort to increase the output.

"While Grade 130 fuel is the product shipped," Brown explained, "increased production of components, butylenes, isopentane and isobutane for your own or other refineries is just as vital. Please push as hard as you possibly can."

A similar appeal was made by Rubber Director Bradley Dewey, who announced that some 400,000 barrels of butylenes were being di-

NOTABLES AT HIGH-OCTANE GASOLINE MEETING

"Give us more and more high-octane aviation gasoline." This was the plea delivered by high-ranking Army and Navy officers and Petroleum Administrator for War Harold L. Ickes at a special meeting with 55 U. S. refiners in Washington, Thursday, June 29. Left to right, seated: Air Marshal Sir William L. Welsh of the RAF; Administrator Ickes; General H. H. Arnold. Standing: H. Wilkison, British Petroleum representative; Deputy Petroleum Administrator Ralph K. Davies; Harry G. Burks, Jr., chairman of the Aviation Gasoline Advisory Committee of P.A.W. and Admiral DeWitt Ramsey, Chief of Bureau of Aeronautics, U. S.Navy.

SAND—THE SABOTEUR

Keep it out of your oil wells!

SAND is nature's great abrasive. In a sand blasting machine it can do useful work. In an oil well it is a destroyer—cutting and wearing away the well, screen, tubing, pumps. It can exact a high cost in replacements, rework jobs and lower production.

The remedy is Texaco *Gravel Packing*. The gravel pack surrounding the well screen holds the producing sand in position, prevents clogging and wearing away of the screen, protects tubing, pumps and surface equipment against destructive sand abrasion and too frequent replacements.

Gravel Packing has paid dividends in lower costs and increased well production in a large number of wells in many different fields.

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Left to right: J. F. M. Taylor, C. E. Davis and Ralph B. High, all of Shell Oil Company.

verted from synthetic rubber manufacture to the refineries producing 100 octane. The output of synthetic rubber will not be affected by the emergency action, Dewey said, since the deficiency will be made up by an increase in the production of rubber from alcohol.

Good weather over many portions of the several European fronts and combat areas in the Pacific is partly responsible for the high consumption of aviation gasoline, according to W. W. White, Aviation Officer of PAW. Air force commanders had not counted on using some of the thousands of planes available 20 hours a day, White pointed out,—with three crews in readiness to take up the fighters and bombers during a 24-hour period. The air armadas now are doing twice as much as was originally believed possible, he said, and this is equally true in the Mediterranean and the Pacific.

"In spite of the fact its got us in a hell of a hole, we're just tickled to death," he commented.

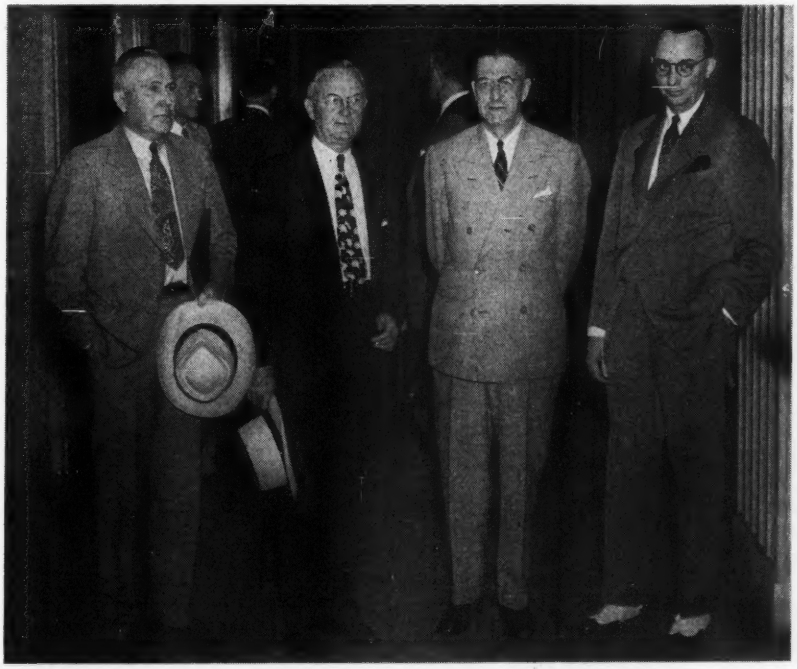
While details of the super-conference of refiners and military officials were not made public, the industry rose to the new challenge in the same spirit in which it shouldered the responsibility of building up the 100 octane program to its present huge capacity.

Answering the statement of Petroleum Adminsitrator Ickes that "the oil industry has never failed to deliver in this war and it will not fail to do even the impossible now —again", William R. Boyd, Jr., chairman of the Petroleum Industry War Council, assured PAW and the Army and Navy that the industry would "make good any check drawn upon it".

Appointment of A. P. Frame, of Lake Charles, La., as director of PAW's refining division, did much to allay the fear that the industry was gradually deserting its duties toward industry-Government cooperation by its reluctance to fill key-positions left by the resignation of officials returning to private life.

Taking leave of absence from Cities Service Refining Corp., of which he is vice president and chief engineer, Frame has assumed the responsibility of handling the countless problems of the refining program,—now more acute because of the need to boost production of 100 octane. He succeeds E. D. Cumming, Shell Oil Co. vice president, who came to Washington in December 1942 and resumed his duties in New York last month.

For the past two years, Frame has been in charge of the construction and operation of the Cities Service 100 octane refinery and butadiene plant at Lake Charles. His experience in the oil business includes several years as plant engineer for the Empire Oil Refining Co. in



Left to right: G. L. Stewart, Imperial Oil Co., Ltd.; J. F. Abrams, Standard Oil Co. (N. J.); Charles Rayner, State Department; W. B. Crampton, Director of Foreign Supply and Distribution, PAW.

More Equipment
WHEN IT'S NEEDED MOST

HERE at Crum-Brainard, we're keeping pace with changing oil industry conditions by devoting more and more of our production capacity to rock bits. Not only are we manufacturing more bits, but we are making them to operators' individual requirements... The eight basic types shown here* give a full range selection to cover all general and many unusual formation conditions, however some localities present drilling conditions peculiar to themselves. When this condition prevails the operator may conceive of and wish to try some special type of cutter made to his own conception. Send us a description of your formations and suggestions of the desired rock bit characteristics and we'll gladly make a bit to meet your specific needs. Buy your bits on performance!

*In numerous competitive runs all over the world, Crum-Brainard bits properly selected for local conditions have out-performed all other types.

Type "OSS" for soft, sticky formations

Type "OS" for shale and medium sand rock

Type "OW" for medium hard shale

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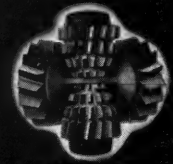

Type "CO" for abrasive limes and shales

Type "C" for hard and abrasive formations

Type "CF" for extremely hard formations

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BRANCH WAREHOUSES

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A. P. Frame
Director of Refining Division, PAW

Ponca City, Okla., refining engineer for the same company in Tulsa and superintendent of the Petty's Island Refinery for the Crew Levick Co. in Camden, N. J., from 1928 to 1938. He was assistant refining director for Cities Service Refining Corp. from 1938 to July 1942, when he became vice president.

In appointing Frame to his new post, Deputy Petroleum Administrator Ralph K. Davies said:

"We are fortunate in obtaining Mr. Frame's service at this critical time when the nation's refining facilities are strained to the limit. He brings to the position an excellent knowledge of refining technology and many years of successful executive experience.

"To produce the great quantities of petroleum products that are needed to meet increased military and civilian needs at this time, the nation's refineries must operate at their maximum efficiencies. As director of the Refining Division, it will be Mr. Frame's responsibility to see that they do. He faces a difficult assignment, but I have complete confidence in his ability to carry it out successfully."

Two other PAW posts were filled last month and three additional members appointed by Davies to PIWC.

Promoted from other positions within the agency, William C. Frysinger and John D. Kurtz became Assistant Directors of the Foreign Supply and Distribution Division. Frysinger will be in charge of short term supply and transportation matters, while Kurtz will handle long term scheduling and planning and administration.

Both men have interesting backgrounds that include long experience abroad, and both were formerly with the Atlantic Refining Co. Frysinger has spent 23 years in the sales department of the company, here and abroad,—having been managing director of the company's Hamburg branch, in Germany, from 1928 to 1939. Kurtz was assistant manager of the Atlantic Oil Storage Co. at Antwerp, Belgium—subsidiary of Atlantic Refining—and later occupied the same post with the Atlantic Refining Co. of Germany, at Hamburg.

The three new PIWC members are Arch H. Rowan, of Dallas, Tex., president of the American Association of Oilwell Drilling Contractors; James W. Vaiden, Tulsa, president of the Natural Gasoline Association of America, and Ferd Spang, of Butler, Pa., president of the Petroleum Equipment Supplier's Association.

Rowan also is president of the Rowan Drilling Co. and one of the foremost oil well drilling contractors in the country; Vaiden is vice president of the Skelley Oil Co., in charge of natural gasoline production and Spang is president of Spang and Co.

. . . The additions to the PAW staff in some measure make up for recent losses in senior personnel. While several high posts remain to be filled, appointment of Frame did much to comfort those who were becoming alarmed at a tendency on the part of industry to consider the war is as good as won and that there is no longer any need for industry top-notchers to leave their jobs and come to Washington. . . . Continuing appointments of high-ranking oil executives to PAW also discourages those who have an eye on the organization with a view to ousting the practical oil men and replacing them with "professional" Government officials.

Fire produced by oil incendiary bombs which were demonstrated in a Japanese type structure erected on Standard Oil Development Company proving grounds.

There's only one thing to do

A great American, Mr. Justice Holmes, once said to America's commander-in-chief: "There's only one thing to do in a war. Form your battalions and carry the fight to the enemy!"

Our battalions *have* carried the fight to the enemy—*before he could carry it here!* Hence no headlines: "Spokane Bombed!" . . . "San Francisco Doomed!" . . . "Los Angeles Falls!" For that, alone, we homefolks owe a debt beyond all paying. Ask any Russian woman! Ask any English mother!

Soon, however, we can make a token payment. But money's no good. We must pay in *work*. Hard work! Extra work! Vacation work! Sure, we're already neck-deep in war-effort. But with eleven million men gone to war, we're elected.

Here's how it is. Where our battalions have carried the fight they can't live off the country. Not in New Guinea. Not in Italy! Not, certainly, in mid-Pacific. From the valleys of California, the fields of Oregon and Washington, the range of the entire West, we must pass the ammunition—food.

Food battalions are now forming. If you're able-bodied, you're asked to join. In field, orchard and cannery, a crisis will come—with harvest. Yet the attack must start now. Everything depends on people *planning* their vacations so they can work in the crops; this major campaign is too complicated to handle on the spur of the moment. Hence your community Wartime Harvest Council already is on the job. See it *now.*

Our battalions—and they include our allies—have carried the fight to the enemy. They've kept the homeland safe. But they can't fight if they don't eat. The food will be here. *We must get it there!* There's only one thing to do!

STANDARD OF CALIFORNIA

E flag, with 2 stars, awarded to our Richmond Refinery

Flanking a pill box or dugout with sudden heat from liquid flamethrowers to clear path for armament-destroying thickened fuel flamethrowers.

Maybe it does not belong in a West Coast oil journal, but development by an East Coast company of three of the outstanding weapons of World War II is classed as an outstanding accomplishment on the part of the petroleum industry and, as such, should interest oil men throughout the country.

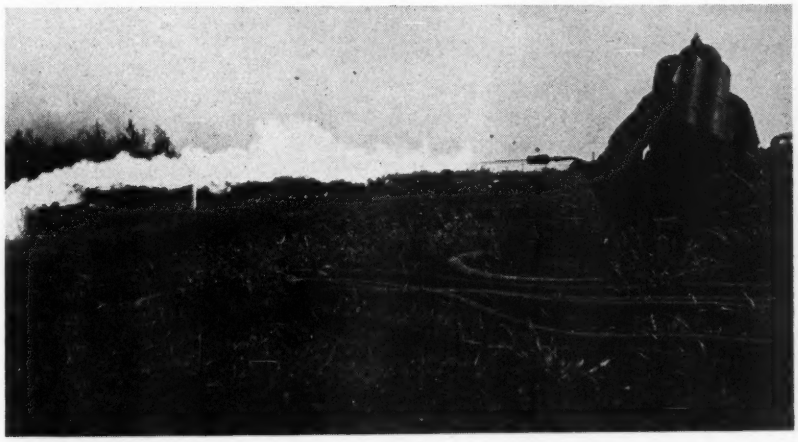
After months of military secrecy, the War Department finally authorized a public showing of the new oil incendiary bomb; the new M1-A1 flamethrower and the portable smoke generator which proved so efficient in the African and Italian campaigns,—all three using petroleum.

The three weapons were developed by Standard Oil Development Co., research subsidiary of Standard Oil Co. (N.J.), after the Army's Chemical Warfare Service had requested the National Defense Research Committee to turn over the job to an organization with the "know-how" to produce weapons superior to those developed by Germany and Japan. The project was financed by NDRC, a branch of the Office of Scientific Research and Development.

The problem of showing the new military products to the public (and, incidentally, capturing a very nice press throughout the East) was neatly taken care of by the Jersey Company and its several subsidiaries. Although Standard remained modestly in the background and the honors went mostly to the Army, the oil company played host to a score of Washington newspapermen and many more New York writers on a two-day trip to New York and New Jersey. High ranking chemical Warfare Service officers—including Maj. Gen. Amos A. Fries, U.S.A. (ret.), "Father of the Chemical Warfare Service," and Brig. Gen. Alden H. Waitt—swelled the party to more than 150.

A demonstration of the new smoke generator was put on by a smoke screen company from CWS, with eight portable units used to blanket a quiet New Jersey valley while the press party watched from a hill-top. The smoke mixture, which has a petroleum base, is ejected from a generator at the speed of sound (1100 feet per second) to spread a white, inpenetrable pall over troop movements, military installations, ships, supply dumps and other objects in need of protection from enemy attack. The petroleum mixture is inexpensive, plentiful and harmless to those to whom it gives protection and is proving invaluable in our overseas operations.

Of particular interest to the Pacific Coast are the incendiary "gel gas" bomb and the new flamethrower,—both used extensively in the southwest Pacific and both destined for high honors when the attack on Japan proper materializes. These weapons — making use of a sticky gasoline based jelly—are peculiarly effective when used against the grass



Close-up of the thickened fuel flamethrower as carried by operator. The three tanks and gun weigh about 60 pounds.

One of a battery of seven mechanical smoke generators in the process of blanketing a New Jersey rural area under a smoke screen at the chemical Warfare Show sponsored by the Chemical Warfare Service and Standard Oil Company (New Jersey).

hut structures of the tropics or the flimsy wood and paper architecture of the Japs.

Tests held at the Bayway refinery of the Jersey Company showed the superiority of the new American weapon, as compared with a faithful reproduction of a German magnesium incendiary of the type dropped during the "blitz" on London. A sturdily-constructed house, of typical German architecture, was set on fire in a matter of minutes, after receiving the new-type incendiary (shot from a mortar above its slate roof)... A "typical" Japanese house, set up in an open field, was transformed into a sea of flames by one hit, and two Jap pill-boxes, or "bunkers," were demolished by men from a flamethrower unit imported from the Edgewood Arsenal.

Briefly, the new bomb has twice the heat content of the German magnesium incendiary and is far more effective because, in bursting it throws burning petroleum jelly as far as 300 feet,—the jelly sticking to everything it touches. The bombs are small and packed with 2½ pounds of "gel gas" which is ejected upon contact from the bomb's tail, in a cheesecloth sock that has been set afire. The bombs, hexagonal in shape, are packed in clusters up to 60 and break into individual bombs as they fall from the plane.

The new A1-M1 is important not only because it has surpassed the range of the old-type M1 flamethrower by 120 feet but because it fires what Standard describes as "a sticky and cohesive rod of easily aimable fire" with deadly accuracy. By adding a powder to ordinary motor gasoline, oil technologists developed "thickened fuel,"—the fuel that sends solid streams of fire for a distance of 180 feet. The old-type liquid fuel flamethrower shoots brief bursts of rolling, billowing flames and is effective at short ranges and when used in covering operations.

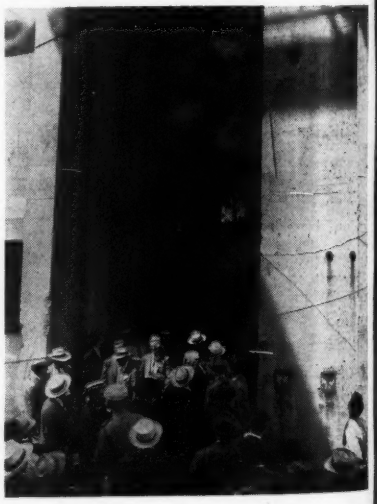
The Washington career of the Navy Department-Standard Oil Co. of California unit operations agreements presumably ended on June 29, with the Navy issuing a pleased little statement pointing to the fact that "the agreements themselves have been found by the Attorney General to be fully authorized by the new law."

An intensive drilling program, adding some 300 wells to the present 234 wells already in production at Elk Hills, will begin immediately, the Navy said, and word has been received from Standard's San Francisco headquarters that 12 strings of tools will be moved into the area immediately.

Production from Standard-owned lands in the reserve will be obtained wholly from the shallow zone, the Navy Department said, since the types of crudes in that zone are "extremely high in both active and lubricating qualities." Average depth of the new wells will be 3000 feet and surface spacing will be one well per 10 acres, but since a differentiation will be made in the sands from which the wells are to be completed, subsurface spacing will be one well per 20 acres.

The Navy pointed out that the oil sands in the Scalez zone have characteristics which indicate that recoveries of oil in place per acre-foot of sand should be as high as any other field in California.

"The oil in place in the Scalez sand is estimated to be over 1500



A simulated German structure bursts into flame a few seconds after it has been "attacked" by oil incendiary bombs. Structure was built in a concrete stall at the Bayway refinery of Standard Oil Company of New Jersey.

(*Continued on Page* 34)

New PAW Orders Eliminate Much Red Tape

Deputy Petroleum Administrator Ralph K. Davies announced on June 26 that regulations on priorities assistance for materials were being revised to enable the petroleum industry to operate with a minimum of paper work.

"Although many critical materials are 'tight'," Davies said, "it is desirable to simplify the procedures for obtaining them. With informative data compiled from experience to date, PAW is now fortified to fulfill its responsibilities as a claimant agency and, at the same time, relieve petroleum operators of many clerical burdens. The present action is consistent with PAW policy to minimize at all times the detail involved in maintaining such wartime controls as cannot be avoided."

Representing the most important step in many months to simplify the priorities machinery used by petroleum operators, PAW said, this new procedure is defined in an amendment to a formal order (Preference Rating Order P-98-b), issued by the War Production Board at the request of the Petroleum Administration for War.

The delivery order filing procedure has been changed to eliminate the need for petroleum operators to submit to PAW information copies of delivery orders for other than controlled materials.

The new order now assigns preference ratings and allotment symbols for material to be used in those small operations which are permitted by Petroleum Administrative Orders to be undertaken without specific authority. This applies to special production operations, natural gasoline recovery, transportation and refining, and relieves the industry of the clerical burden of filing either a Form WPB-541 or a PAW Form 30 requesting priorities assistance for such small operations in those industry branches.

The procedure for securing priorities assistance for large projects has been completely reshaped into a new PAW Form 30, which eliminates the need to furnish a detailed list of all material and equipment required for the project. Controlled materials required will be reported only as an estimated summary, and instead of receiving a 'bank credit' type of allotment, operators will be authorized to use an allotment symbol to secure all the necessary controlled materials required for the project without the need to maintain detailed records concerning the use of such materials.

Recommendation 47 Revoked

On June 24 PAW announced that Petroleum operators may now abandon any oil well without giving prior notice to the PAW. Action was taken by revoking a formal recommendation (Recommendation 47), which required that notice be given 30 days prior to abandonment of any well producing more than one barrel of oil or 6,000 cubic feet of gas daily.

Discussing the revocation, Deputy Petroleum Administrator Davies said:

"Recommendation 47, issued on April 21, 1942, is being revoked in accordance with PAW policy to eliminate restrictions whenever it is practicable to do so.

"The PAW district offices, with the cooperation of the National Conference of Petroleum Regulatory Authorities, the individual regulatory bodies, and various local trade associations, have established working arrangements under which current information on the number of abandonments taking place can be maintained without the necessity for the individual filing required by Recommendation 47."

New Fuel Oil Order

In addition to these simplification orders, PAW has announced a fuel oil distribution order, directed specifically at the West Coast. Minimum viscosities for various grades of civilian fuel oils to be manufactured, delivered, or received in the Pacific Coast states were announced on June 28.

Action was taken by issuance of a formal order (Petroleum Distribution Order 22) which becomes effective on June 28, and applies only to PAW District V. (District V includes California, Oregon, Washington, Arizona, and Nevada).

Deputy Petroleum Administrator Ralph K. Davies said that the order will have very little effect upon the total civilian supply of fuel oil. However, in some instances, it may become necessary for civilians to adjust their oil burners slightly to use the fuel oil at maximum heating efficiency, he said.

"It is necessary to protect the nation's supply of 100-octane aviation gasoline, Navy special fuel, Navy diesel oil, and other petroleum products required by the Armed Forces," Davies said. "Since these products in part come from the same cuts of crude oil that also produce home-heating and industrial fuel oils, it has been deemed necessary to establish minimum viscosities for civilian fuel oils.

"This means that fuel oils for civilians will be maintained at viscosites under which the oils will continue to perform efficiently in burners without requiring greater quantities of oil to produce the same heat as formerly and, at the same time will insure the availability of certain fractions of the crude oil for the manufacture of petroleum products for the Military."

Authority to administer PDO 22 has been delegated to Herbert R. Gallagher the director-in-charge of District Five.

Viscosity minima for the various grades of fuel oil listed by PDO 22 follow:

Furnace oil—not less than 43 Saybolt Seconds Universal at 100 degrees Fahrenheit; light domestic fuel—not less than 35 Saybolt Seconds Furol at 122 degrees Fahrenheit; bunker grade fuel—not less than 150 Saybolt Seconds Furol at 122 degrees Fahrenheit, and railroad and heavy industrial fuel—not less than 200 Saybolt Seconds Furol at 122 degrees Fahrenheit.

Ethyl Manufacture Cut

On June 22, in a move designed to protect the Nation's stockpile of tetraethyl lead for military use, PAW Ickes announced a cutback in the manufacture of premium gasoline for civilian use.

This action was taken by the issuance of a formal order (Petroleum Distribution Order 21), which limits the quantity of premium gasoline

(Continued on Page 32)

60 foot washboard for butadiene gas

Shown nere is a stripper-scrubber, a busy piece of refinery equipment that strips off butadiene gases and then scrubs out impurities—a vital operation in the manufacture of synthetic rubber.

This particular vessel is the largest one of its kind ever built. Although it towers some 60 feet, its steel shell is but one-half an inch thick—a meticulous fabrication job and one logically assigned to the craftsmen of Consolidated Steel Corporation.

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THIS LAUGH

OFF!!

A young widow put up a costly monument to her late husband, and inscribed upon it, "My grief is so great that I cannot bear it." A year or so later, however, she married again, and feeling a little awkwardness about the inscription, she solved the difficulty by adding one word to it, "alone."

Upon inviting a friend to his wedding anniversary an Irishman explained: "We are on the 3rd floor, apartment D. Just touch the door button with your elbow."

"And why should I use my elbow?"

"Well, for heaven's sake, you aren't coming empty handed, are you?"

"What game of bridge does your wife play?"

"Judging from the cost, I thing it must be toll bridge."

Joe: You have a lot of pulchritudinous girls in the show.

Moe: Cute too.

One of our modern young ladies, walking through the zoo, was surprised to find the monkey cages empty. Calling an attendant, she inquired the reason.

"Well, ma'am," replied the attendant, "this is the mating season when the monkeys remain in their houses for several days."

"Will they come out if I give them a peanut?" asked our young lady.

"Darned if I know," said the attendant. "Would you?"

The click of knitting needles, the creak of a rocker, and the tick-tock of a grandfather's clock, were all that disturbed the soothing silence of the room. With childish curiosity little Ellen sat watching the purls and stitches.

"Why do you knit, grandma?" she asked.

"Oh, just for the hell of it," the old lady replied.

One candle on her birthday cake! How does she get that way?

Well, "Life begins at 40," and she's 41 today.

Frank: "My wife ran away last night with my best friend."

Harold: "Good heavens! Was he good looking?"

Frank: "Don't know. I've never met the fellow."

"Hello, is this the Better Business Bureau?"

"Yes, it is."

"Well, how'd you like to come down and make ours a little better?"

She: "Does champagne make you see double?"

He: "No, but it makes me feel single."

A colored soldier was stopped by a sentry one dark night.

"Let me see yo' pass paper," said the sentry.

"Ain't got no pass paper," said the other.

"Cain't pass through here without no pass paper," declared the sentry.

The first soldier rolled his eyes, reached into his coat pocket, drew forth a razor and opened it.

"Boy," he snarled, "I'se got a mother in heaven, a father in hell, and a gal in Blankville. And, believe me, I'se gwine see one o' dem tonight."

Englishman: "I say, what are they doing?"

American: "They're dancing."

Englishman: "They get married later, don't they?"

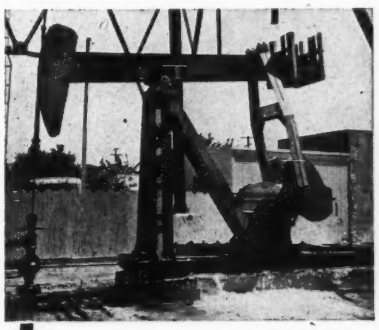
Danny: Daddy is cofferdam a bad word?

Daddy: No, my dear, it is perfectly all right.

Danny: Well, my teacher has a cold and I hope she'll cofferdam head off.

Selectee: "They can't make me fight."

Draft Board Chairman: "Maybe not, but they can take you where the fighting is, and you can use your own judgment."



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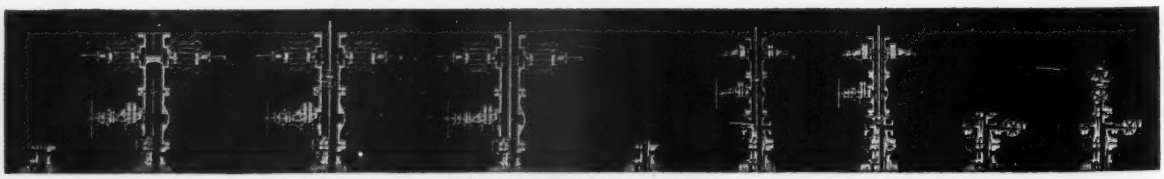


Casing Head Attached | Drilling | Running Casing | Casing Landed | Drilling Control Equipment Removed | Drilling-in and Running Tubing | Tubing Landed | Control Equipment Removed | Manifold Attached

The Engineering and Construction of the Santa Maria Valley Absorption Plant

By D. E. McFaddin, Union Oil Co. of Calif.

Presented at the Regular Monthly Meeting of the California Natural Gasoline Association July, 1944

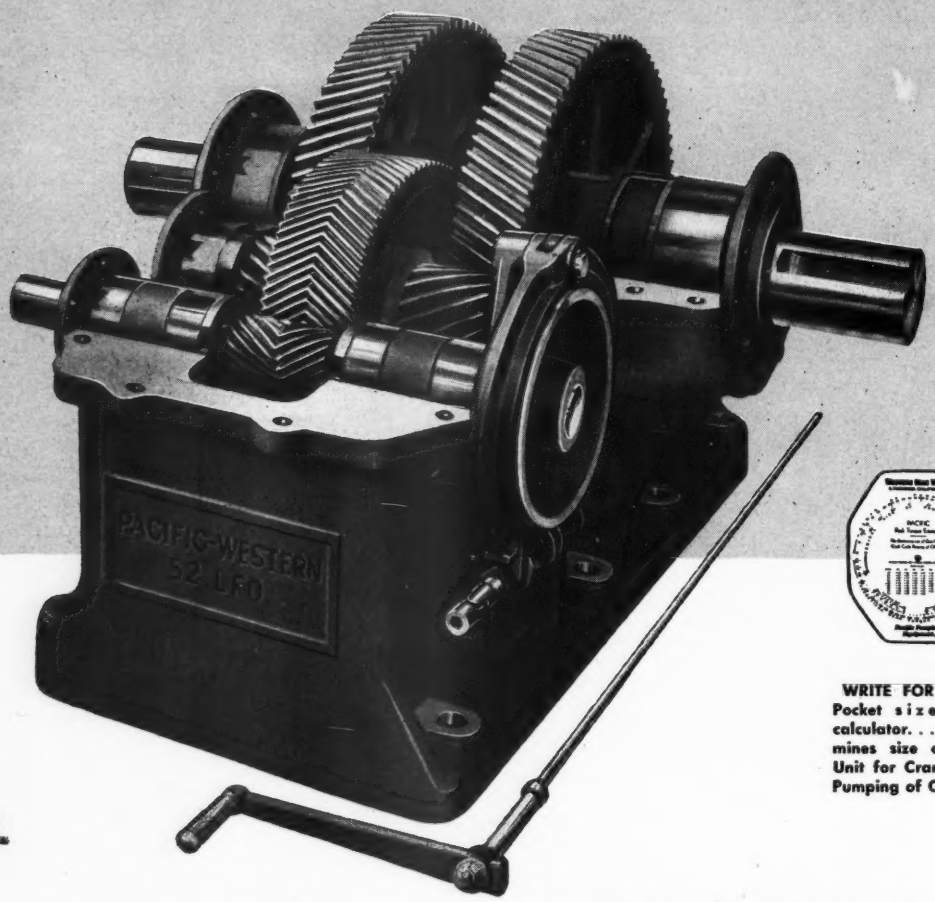
The Santa Maria Valley Oil Field was discovered by the Union Oil Company of California back in 1934. The oil from this field is heavy, running about 15° A.P.I. gravity and has a high sulphur content. During the first three years of the life of the field there was practically no demand for oil of this character and production was at a minimum. However, with the coming of World War II the demand increased so that now there is urgent demand for the maximum of oil production. The conservation and proper utilization of the gas associated with the increased oil production has consequently required the installation of gas treating and handling facilities.

In 1937, gas equipment was installed in the Santa Maria Valley Field to compress about 5,000 Mcf/-Day of wet gas from 20 lbs. ga. to about 150 lbs., and to remove the hydrogen sulfide content of the gas by means of an iron oxide bed and then to transport the gas through seven miles of 6" pipe to Union Oil Company's Orcutt Absorption Plant, where facilities were available to recover the gasoline content of the gas and to deliver the surplus dry gas into the Southern Counties Gas Company lines. This operation was satisfactory for several years, but by the early part of 1942 production had increased until it was apparent that a complete absorption plant was needed in the Santa Maria Valley. It will be remembered that at this time very little new material was available for constructing an absorption plant, and it was necessary to comb the country for idle used equipment. Table I lists the major units of equipment and indicates their source. It is seen that nearly all of the major units were obtained from idle equipment which had previously been in service many years. All of this equipment was thoroughly reconditioned in the Union Oil Company Salvage Shops at Santa Fe Springs. In some cases, fifteen year old "bare rod" welding on pressure vessels was found to have a tensil strength insufficient to meet the desired working pressure. This bare rod welding was chipped out and the vessels rewelded according to modern standards. Pumps, safety valves and instruments were also a very difficult problem and many items of this class were rebuilt in Union Oil Company shops from equipment which had long been discarded. Engineering the process and construction of a plant with such a limited availability of equipment presented many unusual problems. Nevertheless, with help from the War Production Board District 5 office, the necessary priorities were obtained and construction was started on April 15, 1943, and the plant was completed and put into operation December 30, of the same year.

The Santa Maria Valley Absorption Plant was designed to process a maximum of 18,000 Mcf/day with an absorption oil circulation of 16,000 Gal/Hr. and an absorber pressure of 190 lbs. ga.; extracting 80% of the iso-butane content, 97.5% of the normal butane and 99.2% of the pentanes and heavier content of the gas. Table II gives the overall plant commodity balance. The gas from the field reaches the plant at approximately 23 lbs. ga., and is compressed to 210 pounds in two stages. At the interstage pressure of about 75 pounds the gas is countercurrently contacted with 4% soda ash solution to remove the major portion of the hydrogen sulfide. The remainder of the hydrogen sulfide is removed by iron oxide beds after the gas has been compressed to 210 pounds. The iso-butane and heavier fractions of the gas are then extracted from the gas by absorption oil circulated through absorbers operating at about 190 pounds. The water vapor content of the absorption plant discharge gas is then removed in a Southern Counties Gas Company gas dehydration plant, employing diethylene glycol, in order to prevent subsequent condensation and corrosion in the Gas Company's fuel gas transportation and distribution system. A large portion of the plant discharge gas is utilized in the Santa Maria Valley area for domestic and industrial purposes. The remainder is transported to Union's Orcutt Compression Plant where it is compressed to 400 pounds and delivered into the Southern Counties Gas Company's main lines running to Santa Barbara.

Figure I, Flow Chart, shows that the absorption plant cycle is quite simple. There are two absorbers. Each is 46" I.D. and 24 feet high and contains fifteen perforated trays. The absorption oil is metered to the top of each absorber and flows from tray to tray downward, countercurrently against the rising gas. Liquid level controllers automatically hold a constant oil level in the bottom section of each absorber. The main stream of enriched oil from the bottoms of the absorbers flows through interchangers where it is heated to approximately 290° F. It then flows into a rich oil fractionator at 100 pounds pressure. This unit is installed to separate the major portion of the methane and ethane from the absorption oil and other absorbed fractions. The gasoline content of the plant intake gas from the Santa Maria Valley oil field is unusually low. This fact has a direct bearing on the condensation and separation of the gasoline and iso-butane and propane from the lighter absorbed fractions. When theoretical computations were made to determine the proper process cycled it was found that either a high pressure (100 lb.) still, a rich oil fractionator or some other facility was required which would eliminate the major portion of the methane and ethane from the cycle before the main (40 lb.) raw gasoline condenser was reached. Otherwise these light fractions would prevent the satisfactory condensation of the other fractions, especially of propane and the butanes. The use of a 32" I.D. rich oil fractionator was found to be the best

STRENGTH



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suited to the present requirements at the Santa Maria Valley Plant. The rich oil and vapor from the interchangers at 290° F enters the bottom section of the column where the liquid is separated from the vapor. The liquid flows out the bottom to the preheaters while the vapor rises upward through fractionating trays countercurrently against a stream of cold rich oil which flows direct from the 190 pound absorbers to the top of the rich oil fractionator. Table III gives the analyses and rates of the rich oil fractionator vapor and the raw gasoline accumulator vapor. From these analyses it is computed that 86% of the methane and 71% of the ethane are removed from the system by the rich oil fractionator. The vapor from the top of the rich oil fractionator is commingled with the interstage untreated gas at 70 pounds pressure and is compressed and recycled through the absorbers. A heater, condenser, accumulator and pumps are not required for this unit and its operation is very simple. At some future date it can be readily converted to a pressure still in order to produce propane liquid, by installing a 100 pound condenser and accumulator. In which case, a small portion of the raw gasoline production from the low pressure stripping still would be used as reflux for the high pressure still and the remainder of the raw gasoline production from the low pressure stripping still would be circulated through the 100 pound pressure condenser to serve as an absorbing medium for the desired propane. The stabilizer would then be fed from the 100 lb. accumulator.

The rich oil from the bottom of the rich oil fractionator flows through steam heated preheaters into the main stripping and fractionating still where the raw gasoline fractions are removed from the absorption oil. The fractionating-stripping still is 60 inches in diameter and 55 feet high. It has nineteen perforated trays, thirteen of which are above the feed inlet. A water draw-off tray is located immediately below the 7th tray from the top, leaving six trays between the feed inlet and the water drayoff tray. The still also has built in oil reheaters located below the feed inlet. One is located between the 2nd and 3rd tray from the bottom and another is located below the bottom tray. It was realized that the heaters in this still are not ideally located, the optimum location being about two trays down from the feed. However, the cost of changing the location of the heaters would have been prohibitive and it was therefore decided to use the still "as-is". Exhaust steam at 50 lb. ga. from the lean oil pumps is metered into the bottom section of still and rises upward through the perforations of the trays in order to strip all of the raw gasoline fractions from the oil. The still operates at 45 lbs. ga. with a bottom temperature of 350° F and a top temperature of 170° F. The top temperature is maintained automatically by a temperature controller which regulates the amount of raw or stable gasoline used as reflux to the top of the still. The bottom section of the still provides surge capacity for the system and the level at this point varies according to the amount of oil in the system.

The hot lean oil from the bottom of the fractionating-stripping still flows through the shell side of the interchangers to the lean oil pumps which raise the pressure to 250 pounds so that it will flow through the lean oil coolers and into the absorbers, thereby completing the oil cycle.

The raw gasoline production together with the still reflux leave the top of the still in vapor form and are then condensed in cooling units located in the cooling tower and finally are accumulated as a liquid in the raw gasoline surge tank at 40 pounds gauge and about 65° F. The raw gasoline production is then pumped into the stabilizer at 200 pounds where the normal butane and heavier fractions are separated from the remainder of the raw gasoline by fractionation and are produced as stabilized gasoline from the bottom of the column. This product at Santa Maria has a Reid vapor pressure of about 30 pounds at 100° F. The iso-butane content of the raw gasoline is required by alkylation plants in the refineries for the production of aviation gasoline. It is therefore produced as a liquid along with some normal butane and propane as a side cut from the column. This side cut liquid is withdrawn from about the sixth tray from the top of the column. It is impossible to produce a pure iso-butane in this manner because a side cut must contain at least a limited amount of all the lighter fractions which appear overhead. However, a satisfactory concentration of the desired product can often be obtained in this manner.

The removal of hydrogen sulfide from the Santa Maria gas constitutes a major problem. The hydrogen sulfide can be completely removed by means of iron oxide beds which convert the hydrogen sulfide to ferric sulfide; then oxygen, which must be present in the gas for this process to function, converts the ferric sulfide back to iron oxide and deposits free sulfide in the bed. In actual practice the iron oxide bed consists of wood shavings impregnated with ferric oxide, thus leaving a large proportion of the bed volume void to receive the deposited sulfur. The equations for this process are as follows:

$$(1)\quad Fe_2O_3 + 3H_2S \rightarrow Fe_2S_3 + 3H_2O$$
$$(2)\quad 2Fe_2S_3 + 3O_2 \rightarrow 2Fe_2O_3 + 6S$$

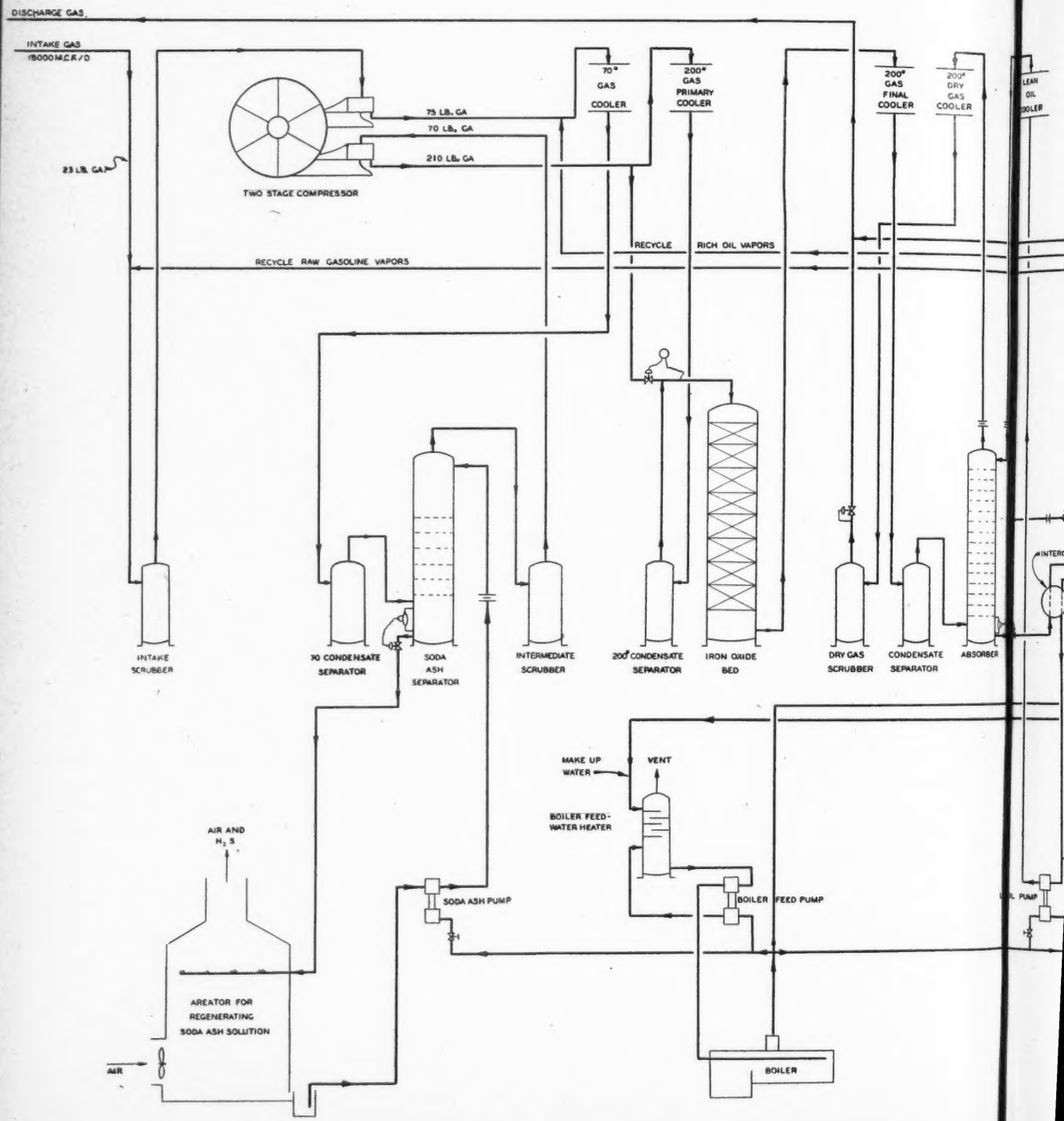
If the humidity and temperature of the gas are properly controlled the reactions indicated by equations (1) and (2) will continue simultaneously until the amount of deposited sulfur is great enough to prevent the hydrogen sulfide in the gas from contacting the ferric oxide. Past experience indicates that a bed will continue to function until about 20 to 25 pounds of sulfur have been deposited per cubic foot of total bed volume. The bed must then be cleaned out and recharged. This process is very expensive in cases in which the hydrogen sulfide content of the gas is high.

The soda ash process is commonly used where the amount of hydrogen sulfide to be removed is great. However, the soda ash process usually will not completely remove all of the hydrogen sulfide and must therefore be followed by an iron oxide bed. The soda ash process is greatly complicated by the presence of CO_2 in the gas as is indicated by the following equations.

$$(1)\quad \underset{\text{Soda Ash}}{Na_2CO_3} + \underset{\text{Hydrogen Sulfide}}{H_2S} \rightarrow \underset{\text{Sodium Hydrosulfide}}{NaHS} + \underset{\text{Sodium Bicarbonate}}{NaHCO_3}$$

$$(2)\quad \underset{\text{Soda Ash}}{Na_2CO_3} + \underset{\text{Carbon Dioxide}}{CO_2} + \underset{\text{Water}}{H_2O} \rightarrow \underset{\text{Sodium Bicarbonate}}{2NaHCO_3}$$

PROCESS FLOW DI
SANTA MARIA VALLEY ABSO



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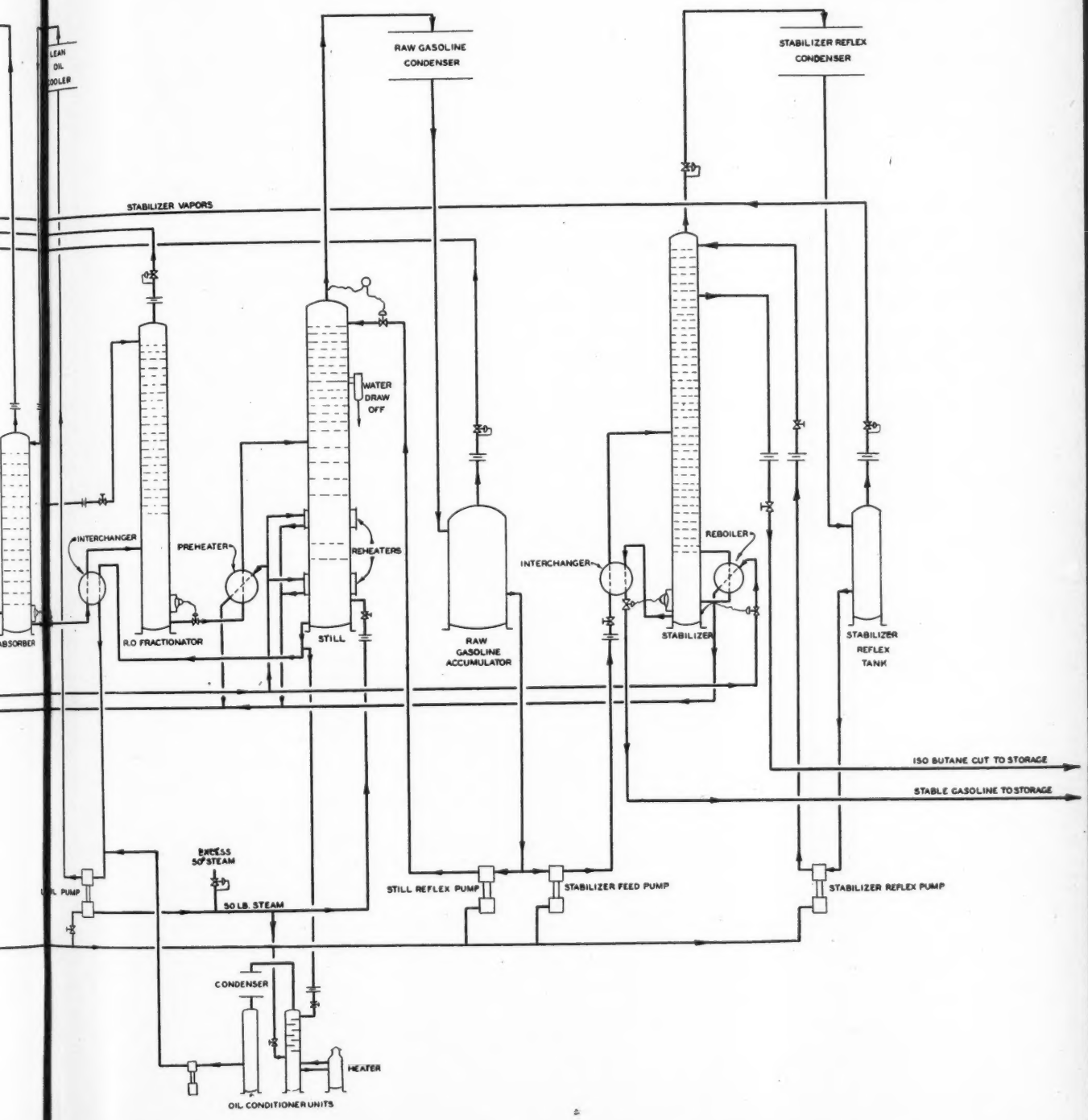
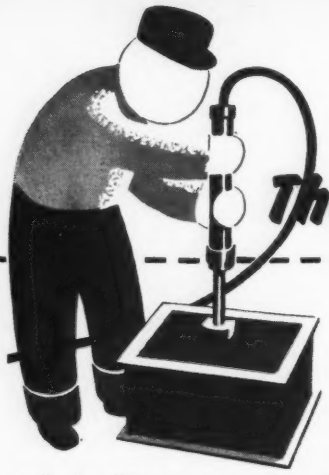
ALLEY ABSORPTION PLANT





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These reactions are reversible and according to the law of mass action a high carbon dioxide content of the gas causes a high sodium bicarbonate concentration as indicated by equation (2), moving from left to right. The high sodium bicarbonate concentration resulting from equation (2) shifts the reaction equilibrium of equation (1) from right to left, thereby reducing the removal of the hydrogen sulfide from the gas.

The soda ash units at Santa Maria were found to perform according to this theory. The 8% carbon dioxide content of the Santa Maria gas converts about 99% of the 4% soda ash solution to bicarbonate. Nevertheless with this mixture about 70% of the hydrogen sulfide is removed from the gas.

The soda ash process provided at Santa Maria consists of pumping a 4% soda ash solution to the top of two parallel 81" diameter contactors or absorbers, each containing six perforated trays. The contactors operate on the cooled compressor interstage gas at about 70 lbs. ga., and a solution-to-gas ratio of about 35 gallons per standard Mcf is employed. The solution from the bottom of the contactors flows through liquid level controllers to an areator where equation (1) is reversed by spraying the solution into a rising current of air, so as to remove the hydrogen sulfide from the field of action and discharge it from the top of the areator. A conventional forced draft cooling tower with a 50 ft. high extended discharge stack is employed as the areator and sufficient air is blown through the areator to dilute the hydrogen sulfide to below the toxic danger limit. Equation (2) is theoretically also reversible in the areator. Practically, however, the reaction rate of equation (2) from right to left is very slow. Consequently the percentage conversion of carbonate to bicarbonate is predominately a function of the equilibrium conditions in the contactors, and very little carbon dioxide is removed from the gas after the process has been in operation a short time.

There are certain features of the processes and the construction of the Santa Maria Absorption Plant which are different from an ideal plant which would be constructed if the required materials and equipment are available. For example, direct fired heat of the absorption oil is superior to steam heat. Also, absorbers with twenty or more trays instead of fifteen trays are advantageous. However, in spite of these limitations the fact remains that the plant was successfully constructed and put into operation under adverse conditions and is adding its share of production to the war effort.

TABLE I

Source and Description of the Main Units of the Santa Maria Valley Absorption Plant

Compressors

One 150 H.P. model XVG Ingersoll Rand Compressor
350 rpm
One low stage cylinder 12" x 14" with variable clearance
One high stage cylinder 8" x 14"

Eleven Cooper Type 80 twin compressors
200 rpm
One low stage cylinder 13" x 20" with clearance chambers
One high stage cylinder 8" x 20"
The Coopers were fitted with special cams to enable developing the maximum horse power.
The Cooper power cylinders were also adapted to overhead air intakes and were equipped with Vortox air cleaners.

The Ingersoll Rand XVG and three of the Cooper 80's had been installed at the plant location prior to the construction of the absorption plant in 1943.

All the additional compressors had previously been in service at various locations many years and required extensive repair work before being put into service in the new plant. The Coopers are now developing about 185 brake horse power; and were originally rated by the manufacturer at 175 brake horse power.

Absorbers

Two 46" I.D. x 25' high absorbers, previously used in a North Belridge Absorption Plant were adapted for use at Santa Maria. These vessels had been operated at 400 lbs. ga. for many years, but under present code standards they are rated at 200 lbs. ga. maximum allowable working pressure.

Each absorber has a computed maximum capacity of about 11,000 Mcf/Day at 200 lb. ga. with an oil circulation of 8,000 Gal/hr. In order to obtain this capacity the total number of perforations in each tray was increased from 1,900 to 5,700 and new larger inlet and outlet nozzles were installed. The perforations are 9/64" in diameter. Each absorber originally had 16 trays. However, it was necessary to sacrifice one tray in each absorber to accommodate the new nozzles.

Interchangers

Six Braun F-155 units with a total heat transfer surface of 2,200 sq. ft. were obtained from a dismantled absorption plant at Elwood. They were installed in two parallel banks, each with three units in series. A heat transfer K of 100 Btu per sq. ft. per degree F. temperature difference is being obtained with these units, which is very good performance.

Rich Oil Fractionator

A 32" I.D. x 50 ft. high column with 22 bubble cap trays was obtained for this service. It was formerly used as a stabilizer column in an Elwood absorption plant and originally had a maximum allowable working pressure of 250 lb. ga. However, this was reduced to 170 lbs. ga. in accordance with present safety code standards.

Preheaters

Two Braun F 150 units with a total heat transfer surface of 750 sq. ft. were obtained from a dismantled plant at Elwood. These units are now performing with a heat transfer "K" of over 200 Btu/sq. ft./°F.

Fractionating-Stripping Still

A 60" I.D. x 55' high column with 19 perforated trays was obtained from Union Oil Company's Bell Absorption Plant at Santa Fe Springs where it had been standing idle for about ten years. It has a 55 lb. maximum allowable working pressure; built in oil reheaters, and facilities to withdraw stripping steam condensed within the

fractionating section of the column. The perforations of the fractionating trays for this column had previously been drilled beyond the limit of efficient performance for the conditions at the Santa Maria Absorption Plant. Therefore about 50% of the perforations were blanked off with plates of sheet metal. They are performing satisfactorily.

Stabilizer

A 32" I.D. x 77' high column with 40 bubble cap trays, together with interchangers and a reboiler, were obtained from Union Oil Company's absorption plant at Del Rey, where they were standing idle. They had been in corrosive service for about 12 years. However, after some repair work, a maximum allowable working pressure of 230 lbs. was obtained which is only 20 lbs. less than the 250 lb. working pressure allowed when the vessel was first built.

This vessel was originally equipped with a reflux condenser located on its top. This part of the equipment was in bad condition and was junked. The unit was then redesigned to operate with a reflux tank at ground level with condenser coils located in a cooling tower. The reboiler was also redesigned and augmented. Side draw-off connections were provided between the feed inlet and column top for the production of an iso-butane cut or of liquefied petroleum gas.

Oil Conditioner

A 20" diameter oil conditioner was constructed entirely from salvaged material to separate gums and foreign matter from the oil.

TABLE III
Recycled Vapors
Santa Maria Valley Absorption Plant

	Rich Oil Fractionator Vapors	Raw Gasoline Accumulator Vapors
Analysis	Mol %	Mol %
Water Vaopr	0.50	0.50
Carbon Dioxide	12.60	5.80
Methane	49.64	17.50
Ethane	12.64	11.23
Propane	20.72	36.13
Iso Butane	1.40	3.38
Nor Butane	1.93	15.75
Pentanes and Heavier	0.57	8.71
	100.00	100.00
Gallonage Content	Gal/Mcf	Gal/Mcf
Iso Butane	0.456	3.055
Nor Butane	0.607	4.954
Pentanes and Heavier	0.207	1.349
Gas Rate—Mcf/Day	610	280
Recycled Gallonage	Gal/Day	Gal/Day
Iso Butane	278	855
Nor Butane	370	1390
Pentanes and Heavier	126	378

Texaco Makes Fast Hole

On the northerly flank of the Long Beach field, The Texas Co. is making fast time in Bauman No. 8. Located southeast from the intersection of Spring and Orange Streets, the crew has made 4962 ft. of hole in nine days. The well is being slim hole drilled into the Brown zone. Northwest of this well the operator is preparing to drill Field No. 23, on the southwest corner of 32 street and California Ave. This well will also be drilled to the Brown zone.

Glass is being used for more and more types of things. Tire fabrics made of glass are now in the experimental stage. This same type of fabric is being used for wicks in some oil lamps. Glass wicks will not char or smoke.

BUY WAR BONDS

TABLE II
Overall Plant Commodity Balance
Santa Maria Valley Absorption Plant

	18,000 Mcf/Day Intake Gas			Extracted Products				17,280 Mcf/Day Discharge Gas		
Component	Gas Vol. Per Cent	Gal/ Mcf	Gal/ Day	29# Reid V.P. Gas. Gal/ Day	Iso-Butane Side Cut Gal/ Day	Total Liquids Gal/ Day	Liquid Extraction Per Cent	Gas Vol. Per Cent	Gal/ Mcf	Gal/ Day
Hydrogen Sulfide	25 gr./ 100 C.F.							.00		
Water Vapor	0.30							.05		
Air	1.00							1.00		
Carbon Dioxide	8.80							9.20		
Methane	79.83				10	10		83.10		
Ethane	3.87				25	25		4.02		
Propane	3.19				1,120	1,120		2.48		
Iso-Butane	0.51	0.167	3,006	240	2,166	2,406	80	0.11	0.035	600
Nor-Butane	1.22	0.383	6,894	6,200	524	6,724	97.5	0.03	0.01	170
Pentane & Heavier	1.28	0.500	9,000	8,930		8,930	99.2	0.01	0.004	70
Total	100.00			15,370	3,845	19,215		100.00		

Panelboard Conversion Plan

An interesting 16-page pamphlet, CA-575, describing a unique method of converting obsolete and inadequate electric light and power panelboards to full efficiency and modernness without disturbing the box or conduit is available upon request. Booklet is illustrated with "before" and "after" illustrations accompanied by brief history of each case. Write SQUARE D COMPANY, 1318 East 16th St., Los Angeles, 21.

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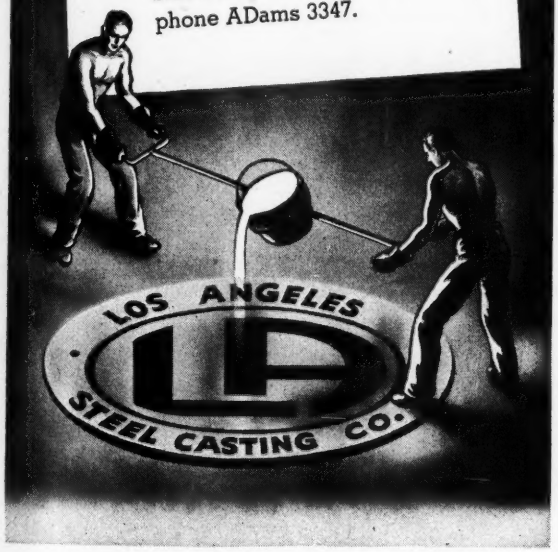

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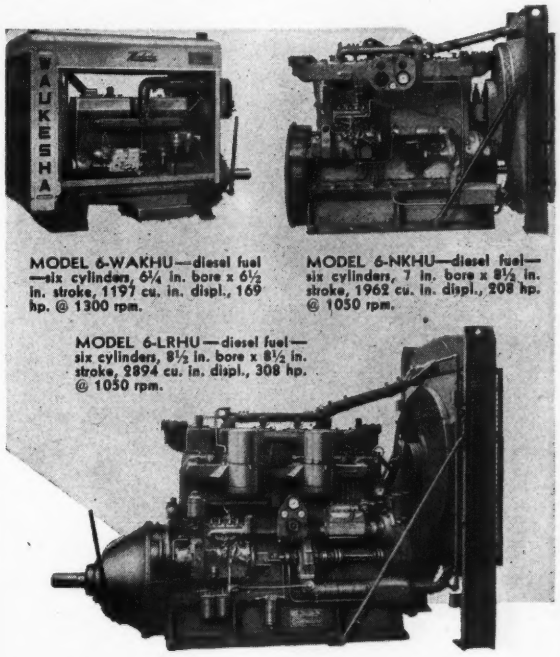

MODEL 6-WAKHU—diesel fuel—six cylinders, 6¼ in. bore x 6½ in. stroke, 1197 cu. in. displ., 169 hp. @ 1300 rpm.

MODEL 6-NKHU—diesel fuel—six cylinders, 7 in. bore x 8½ in. stroke, 1962 cu. in. displ., 208 hp. @ 1050 rpm.

MODEL 6-LRHU—diesel fuel—six cylinders, 8½ in. bore x 8½ in. stroke, 2894 cu. in. displ., 308 hp. @ 1050 rpm.

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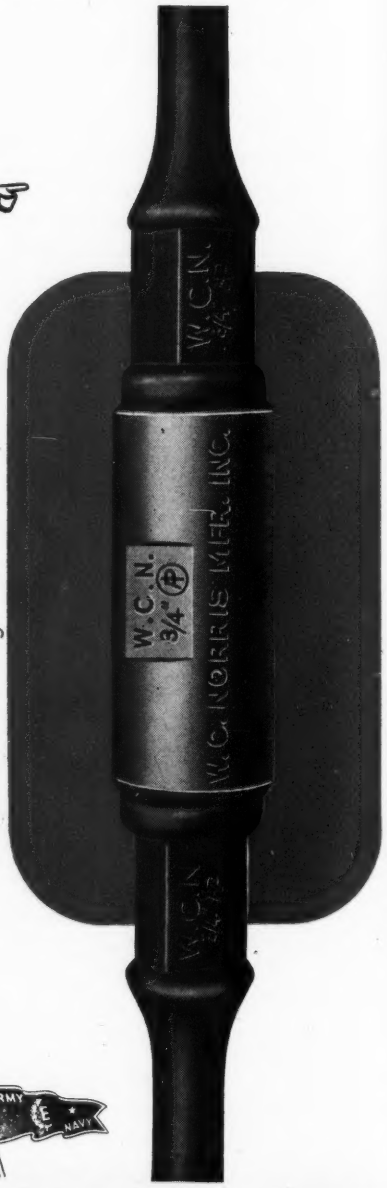

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Field Development

Los Angeles Basin

Wilmington Completion

At the extreme southeast end of the Wilmington field, the Long Beach Oil Development Co. has completed "Z" No. 10. Located on a fill at the mouth of the flood control channel, the hole was cored to a total depth of 2765 ft. and has a string of 8⅝ inch casing cemented over the Ranger zone at 2391 ft. A gravel pre packed, perforated liner was landed at 2765 ft. On the initial gauge the well produced 271 barrels of 20 gravity oil showing a cut of 1%, flowing through a 20/64 inch bean with 250 pounds tubing pressure and 630 pounds casing pressure. The completion of this well adds materially to the known proved acreage of the field.

Capital Co. Testing

In the Turnbull Canyon area of Los Angeles county, the Capital Co. is testing two wells on section 11-2s-11w. Baldwin No. 2, has been bottomed in shale and heavy oil sand at the total depth of 1285 ft. and cemented a string of 8⅝ inch casing over the oil showings at 1109 ft. and is now cleaning out preparatory to making a production test. Northeast from this well, Cole No. 1, was bottomed in Miocene shale at the total depth of 2935 ft. and plugged back to 2000 ft. A string of seven inch casing was cemented at 1835 ft. and a five inch liner, including 170 ft. perforated landed at 1997 ft. The hole is now being bailed with the recovery consisting of oil and silty mud. With steady bailing the fluid level stays at about 300 ft.

G. P. Heath Reaming

Approximately one mile northwest of the town of Buena Park, the General Pet. Corp. is reaming Heath No. 1, preparatory to making a formation test. Located near the northeast corner of section 34-3s-11w, the well is bottomed at the depth of 11,025 ft. The operator intends to test showings which were found from 10,985 ft. to the present depth.

Getty Testing

J. Paul Getty Westmore No. 1, located south of the Potrero field is preparing to retest. Located in section 2-3s-14w, the hole was originally drilled to 8931 ft. and then directionally redrilled to the south and deepened to 9109 ft. The top of the O'Dea sand was found at 8668 ft. and a string of seven inch casing cemented at 8735 ft. A five inch liner was landed on bottom and the well swabbed wet. The liner was pulled and a water witch run located the entry of fluid at the shoe of the seven inch casing. After squeezing additional cement around the shoe the operator is now preparing to make another production test.

Puente Hills "Cat" Running Casing

In the Puente Hills area of Los Angeles county, Melvin Hansen is running five inch casing into Core Hole No. 3. Located in section 24-2s-10w, the hole is bottomed in shale at the total depth of 1900 ft.

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Athens	J. Paul Getty, Westmore	1	2, 3-14	9108	Recementing
Aliso Canyon	Barnsdall-Bandini Pet. Co., Roosa	1	29, 3-16	9362	Testing
	Standard Oil Co., Frew	1-2	29, 3-16	9339	Testing
	Standard Oil Co., Del Aliso	1	29, 3-16		Rig
	Standard Oil Co., Ward	3-1	27, 3-16	773	Drilling
Dominguez	Macmillan Pet. Corp., Carson	1	35, 3-13	6595	Drilling
El Segundo	Pauley, H. R. & E. W., Loftus	1	11, 3-15	7291	Prep. to redrill
Elysian	Seaboard Oil Corp., Park	1	9, 1-13	2300	Drilling
Hasley Canyon	Shell Oil Co., Inc., Claiborne	88-4	4, 4-17		Grading
Las Llajas	Standard Oil Co., Brady Est.	2-1		518	Drilling
Loma Verde	Shell Oil Co., Shell-Cont.	86-20	20, 5-17	7006	Drilling
Newhall	Pet. Expl. Co., Kraft	1	31, 4-15		Rigged—Idle
Norwalk	Gen. Pet. Corp., Comm.	14-1	7, 3-11	7306	Drilling
Pico Canyon	Standard Oil Co., Pico Co.	42	1, 3-17		Rig
Puente	Hansen, Melvin, Corehole	3	24, 2-10	1900	Rng. casing
Rolling Hills	Hunsaker & Atha, H. & S.	5-4	27, 4-10	3380	Abandoned
Rosecrans	Standard Oil Co., Bell Comm.	1	29, 3-13	7810	Drilling
Turnbull Canyon	Capital Co., Cole	1	11, 2-11	2935	Bailing
	Capital Co., Baldwin	2	11, 2s-11w	1285	Testing
	Orange County				
Buena Park	Gen. Pet. Corp., Heath	1	34, 3-11	11025	Testing
Costa Mesa	Lovelady & Frambes, Destiny	1	9, 6-10	1685	Coring
E. Coyote	Barnsdall Oil Co., Sunny Hills	2	22, 3-10		Grade
Placentia	Providence Oil Co., Chapman	1	36, 3-10	3904	Fishing
	San Bernardino County				
Chino Hills	Chino Hills Oil Co., Kraemer	1	33, 2-8	1627	Drilling
	Wm. Y. Lee, Corehole	2	21, 2-8	3010	Bailing
	Imperial County				
Salton Sea	O'Quinn & Hadley, All Am. Acres Comm.	1	11, 9-12		Rigging up
	Pure Oil Co., State	1	26, 10-9	5380	Drilling
	Standard Oil Co., Southern Land Co.	1	27, 11-9	4283	Drilling

Considerable heavy oil sand was found below 1700 ft. which the operator is now planning to test.

Rolling Hills Test Abandoned

On the north slope of the Palo Verde Hills, Hunsaker and Atha have abandoned H. & S. No. 1. The hole was bottomed at the total depth of 3380 ft. after having cored steeply dipping shale from 1900 ft. to bottom. There were no showings of any value found in the hole. The operator is reported to be planning another test in the near future.

City Well in Slate

The Seaboard Oil Corp. has found the basement in Park No. 1. Located south of Elysian Park, in the heart of Los Angeles city, the well is currently drilling ahead in hard Slate below 2300 ft. The top of the weathered Slate was found at 1340 ft. and the top of the solid Slate at 1495 ft. The hole is now drilling ahead to satisfy the operators contract with the City of Los Angeles.

Shell Abandons Joint Test

The joint test of the Shell Oil Co. and the Continental Oil Co. Shell-Conoco No. 86-20, is being abandoned at the total depth of 7006 ft. Located on the Loma Verde Anticline in section 20-5n-17w, the well found only a very slight showing of oil at 4970 ft. The rig is being moved about three miles south into Hasley canyon where the Shell Oil Co. will drill Claiborne No. 88-4. The location for this well is 390 ft. north and 453 ft. west from the southeast corner of section 4-4n-17w. This location falls about 3000 ft. southwest of The Texas Co. Towle No. 1, which was abandoned at the depth of 7220 ft. after testing some minor oil showings found in the Miocene.

Shallow Test in Surf Area

On the north side of the Pacific Coast Highway, east of the town of Huntington Beach, D. R. Young is grading location for Surf No. 1. Located on the extreme westerly end of the Mills property, the well is being drilled to test the shallow sands which are found in this area at approximately 1800 ft. The location falls in section 14-6s-11w.

Shell Stakes Brea Outpost

The Shell Oil Co. continues to push the producing limits of the Brea Canyon field to the northwest. Orange No. 24, was recently completed on the pump for a settled 450 barrels per day of 27 gravity clean oil, producing from several stages of perforations between the depths of 3390 ft. and 5175 ft. The operator is now moving approximately 400 ft. to the northwest where location has been staked for Puente No. B-1, 35 ft. north and 235 ft. west from the southeast corner of section 34-2s-10w.

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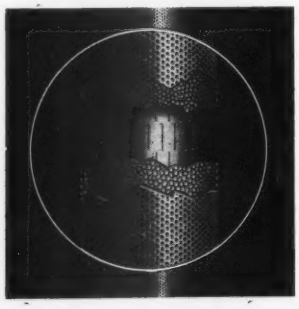

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Coastal and Northern Districts

Union Testing McNee Core Hole

The Union Oil Co. is making a pumping test of the Monterey Chert zone in McNee Core Hole No. 2. Located on section 20-9n-32w, in the East Cat Canyon area of Santa Barbara county, the hole was bottomed in shale and heavy oil sand at the total depth of 4034 ft. Initial estimates place the production at about 50 barrels per day of 8 gravity oil with 20 percent drilling fluid still being produced. The operator has been drilling a series of core holes in this area for the past several months and are currently drilling McCroskey No. 1, approximately 1500 ft. northwest of the above well.

Santa Maria Activity

The demand for heavy crude on the Pacific Coast has stimulated the Santa Maria Valley field to a point which is rapidly approaching the boom stage. A check up of the wells finds 10 strings of tools running in the field. Of this number, the Union Oil Co. is running seven, with the Bel-Air Oil Co., the Five "C" Refining Co. and the W. R. Gerard organization running one string each. There are six derricks up and waiting for the crews and ten other projects in the preliminary stages of construction.

Shiells Canyon Completion

In the recently discovered westerly extension of the Shiells Canyon field, the Los Nietos Co. has completed Elkins No. 2-4. Located in section 5-3n-19w, the well is pumping a settled 110 barrels per day of 34 gravity clean oil. The total depth of the hole is 3050 ft. with seven inch casing cemented at 2730 ft. The operator is currently drilling Elkins No. 2-5 and 2-6 in the area at the depths of 3000 ft. and 200 ft. respectively.

Deep Test Rigging Up

In Solano county, approximately five miles southeast of the town of Dixon, the Amerada Pet. Corp. is preparing to resume operations in Starkey Fee No. 1. Located in section 2-6n-2e, the hole was drilled and cored to a total depth of 9434 ft. and suspended in May of 1943. The company has released no information on the well but it has been unofficially reported that sands noted on the electric log were checked by sidewall samples and are thought to be capable of commercial production.

Shell Abandons Los Banos "Cat"

In the Los Banos area of Merced county, the Shell Oil Co. has abandoned Wolfsen No. 61-3. Located in section 3-9s-11e, the hole was drilled and cored to a total depth of 4484 ft. where the bottom was in shale with streaks of gray sand. There were no showings of either oil or gas at any point in the hole.

Stockton "Cat" in Cretaceous

In San Joaquin county, southeast of the town of Stockton, the Standard Oil Co. Fair Oaks A Comm. No. 1, is coring ahead in Cretaceous gray sand and shale below 6500 ft. The company is withholding all information on this well which is located in section 19-1n-7e.

Standard Abandons Tracy Cat Test

Southeast of the Tracy gas field, the Standard Oil Co. has abandoned Gerhart Comm. No. 1. Located in section 24-2s-5e, the hole was bottomed in shale at the total depth of 5900 ft. A formation test made of a gas sand found from approximately 4700 ft. to 4750 ft. showed only a few puffs of gas with the fluid recovered in the drill pipe being all rotary mud.

Outpost Abandoned

Northwest of the Moffatt Ranch gas field, The Texas Co. has abandoned Moffatt No. 47-1. Located near the south ¼ corner of section 1-12s-14e, the well encountered no oil or gas sands at any point in the hole.

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
	Santa Barbara County				
Cat Canyon	Richfield Oil Corp., Los Flores	1	10, 8-33	6061	Drilling
E. Cat Canyon	Union Oil Co., McNee, C. H.	2	20, 9-32	4034	Drilling
	Union Oil Co., McCroskey, C. H.	1	20, 9-32		Rigging up
Lompoc	S. R. Williams, Fickert	1	8, 7-33	3435	Fishing
Los Alamos	J. I. Anderson & So. Calif. Pet. Corp., Archambeault	2	3, 7-32	418	Drilling
Los Olivos	Hub Oil Co., La Laguna	1	7, 7-30	3580	Cleaning out
Purisima	Whittier Assoc., Barham	2	11, 7-32	560	Drilling
Sta. Rosa Ro.	The Texas Co., Petan	2	20, 6-32	907	Drilling
	Ventura County				
Devils Anticline	Shell Oil Co., Rogers C. H.	B	22, 5-18	2267	Drilling
Eureka Canyon	El Rika Oil Co., Well	7	33, 4-18		Location
Fillmore	Standard O. Co., Fillmore Comm.	2-1	24, 4-20	14512	Fishing D.P.
Piru	Delroy Pet. Corp., Lisk	3	22, 5-18	3149	Pumping
	Standard Oil Co., Bowman	2-1	14, 4-18	6718	Drilling
Sespe	Volunteer Pet. Co., Tar Creek	3	28, 5-19	2179	Drilling
	Merchants Pet. Co., Well	9	1, 4-20		Location
Simi	Mayo Oil Co., Montgomery	1	16, 2-18	4000	Abandoned
South Mt.	Pac. West. O. Corp., M. Richardson	1	24, 3-21	3293	Drilling

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Butte	Richfield Oil Corp., Hamilton-Nord	1	9, 22n-1w		Rig
Colusa	Standard Oil Co., Princeton	1	24, 18n-2w	2980	Testing
	Union & Gen. Pet. Corp., Azro	1	10, 16n-1w	3018	Abandoned
	Union & Gen. Pet. Corp., Capital	2	27, 16n-1w	1444	Drilling
Contra Costa	Shell Oil Co., Heidorn	1	4, 1n-2e	4048	Abandoned
San Benito	Panoche Pet. Co., Panoche	1	24, 16s-10e	650	Bailing
San Joaquin	Standard Oil Co., Fair Oaks	A-1	19, 1n-7e	6500	Drilling
	Standard Oil Co., Gerhart	1	24, 2s-5e	5900	Abandoned
San Mateo	Richfield Oil Corp., Lena Souza	1	13, 7s-5w		Rig
Solano	Amerada Pet. Corp., Starkey Fee	1	2, 6s-2e	9434	Resuming
	Standard Oil Co., Suisun	3	5, 3n-1w	3821	Drilling
	Standard Oil Co., Fontana	1	23, 3n-1w	4845	Drilling
Tehama	Richfield Oil Corp., Gallitan	1A	26, 25n-3w	3840	Drilling
	Superior Oil Co., Saldubehere	1	12, 24s-3w	4071	Drilling
	The Texas Co., Jelly-Bend	18-8	8, 29n-2w		Grading

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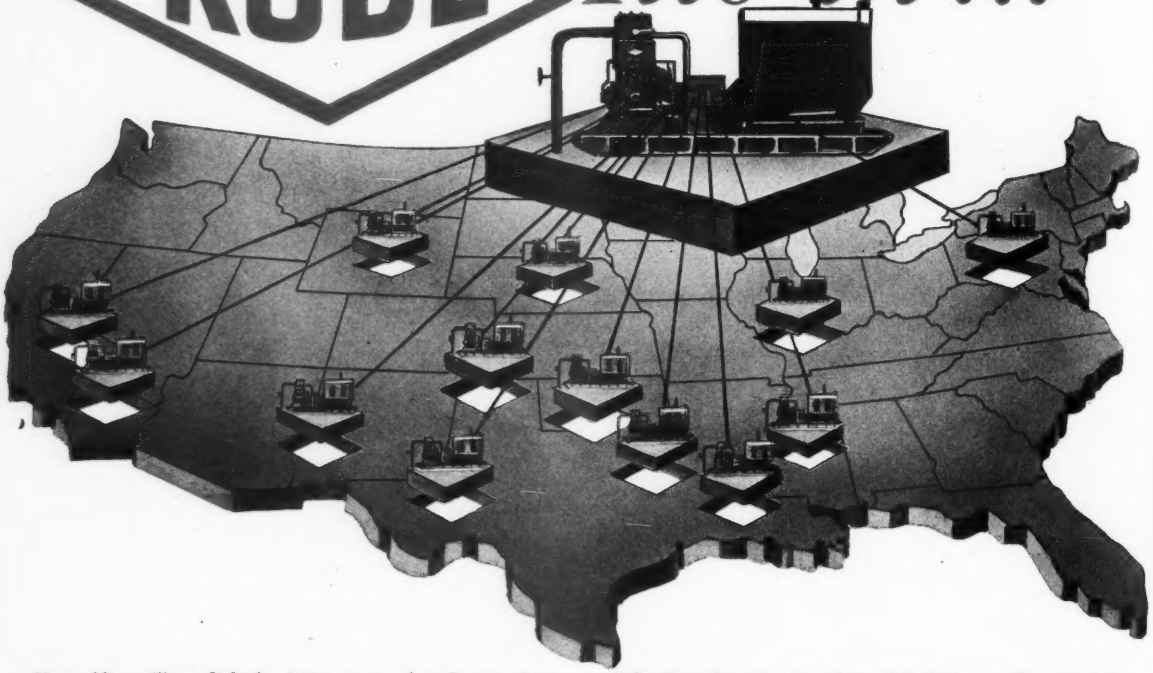

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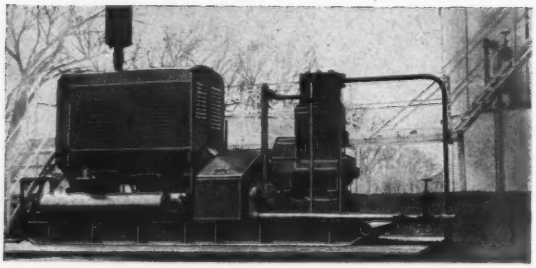

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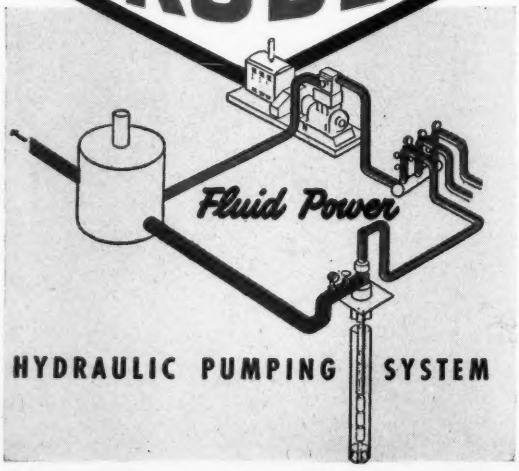

The northwesterly producing limits of the Moffatt gas field have apparently been found in this hole which was drilled to a total depth of 3996 ft.

Madera Core Holes

In Madera county, north and east of the town of Madera, the Union Oil Co. is currently engaged in drilling a series of Core Holes. Floto No. 1, located in section 5-11s-18e, was abandoned in basement rocks at the total depth of 2670 ft. In section 22-11s-19e, Smith No. 1, has been abandoned at the depth of 1195 ft. The company is currently drilling Foss No. 1, near the southeast corner of section 6-12s-20e.

Anderson Spuds Los Alamos Test

Near the southwest corner of section 3-7n-32w, J. I. Anderson and the Southern Calif. Pet. Corp. have spudded their second joint test Archambeault No. 2. Currently drilling ahead below 500 ft., the well is located approximately 620 ft. due south of the recently abandoned Archambeault No. 1, which was drilled to the total depth of 4765 ft. and directionally redrilled to 2500 ft. The desired course could not be maintained in the redrilled hole and the well was abandoned.

Standard Coring

South of the Holser Canyon field, The Standard Oil Co. is coring ahead in Bowman No. 2-1, below 6700 ft. Located in section 14-4n-18w, the operator is looking for the sand being produced in the Continental Oil Holser No. 1.

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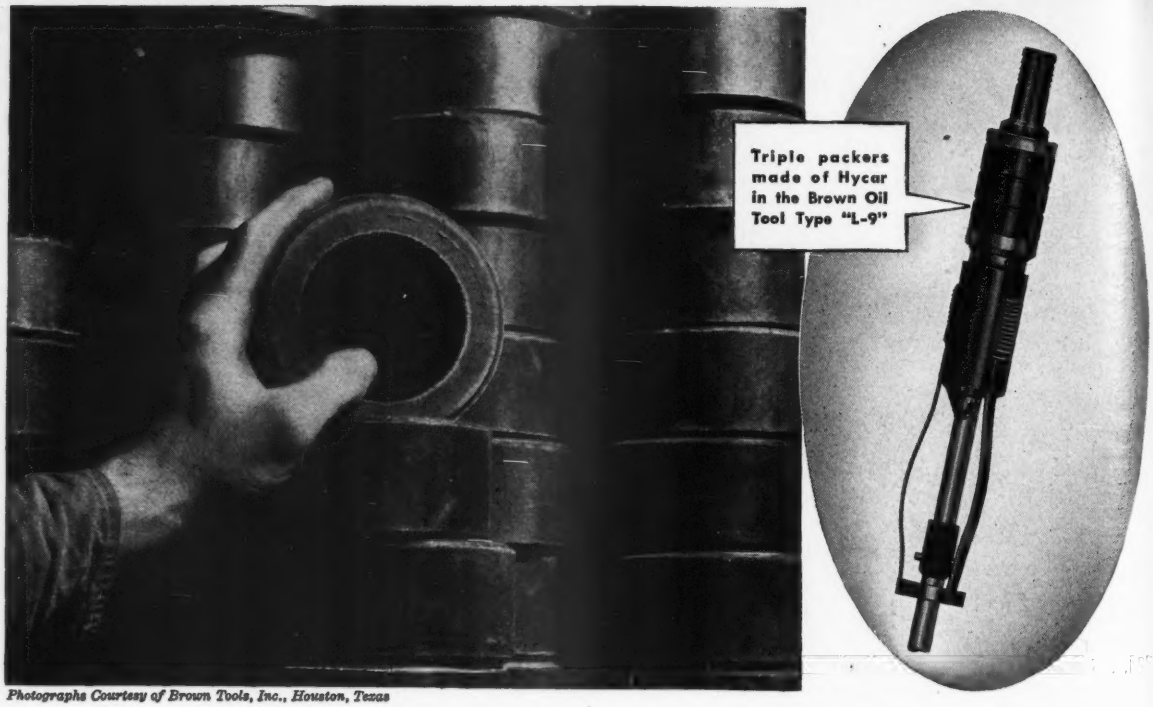


Photographs Courtesy of Brown Tools, Inc., Houston, Texas

HYCAR CAN HANDLE THE TOUGH JOBS

FINDING a packing material to meet the tough service of oil well tubing packers was a problem for Brown Oil Tools, Inc., until they tried Hycar synthetic rubber.

Since it is necessary to set, unset and reset tubing packers many times during the life of a well, a good packing medium must be strong, elastic, resistant to deterioration from gas and oil, and must not adhere to the wall of the casing in which it is compressed.

Many materials were tried but *only* Hycar could satisfactorily meet all of these requirements.

Hycar packoffs not only give longer, better service, but they can be replaced easily when finally worn out as they do not bond to the casings nor swell and bind in place.

Here is another example of how Hycar—with its superb resistance to petroleum products, its high abrasion resistance and its high tensile strength can handle a tough job.

Ask your supplier to furnish you parts made of Hycar for actual tests in your own application. Find out what Hycar can do to meet your tough problems. *Hycar Chemical Company, Akron 8, Ohio.*

WHAT HYCAR DOES IN PACKOFFS

1. Resists oil and gas under high pressure.
2. Provides high elasticity.
3. Does not adhere to steel.
4. Wears at slow rate even under worst conditions.
5. Relatively stronger than other materials.
6. Quickly replaced when finally worn.
7. Proved performance by actual field tests.

Hycar

Reg. U. S. Pat. Off.

LARGEST PRIVATE PRODUCER OF BUTADIENE TYPE

Synthetic Rubber

San Joaquin Valley

Coles Levee Deep Test

Midway between the South Coles Levee field and the Elk Hills field, the Standard Oil Co. is drilling ahead below 14,100 ft. in KCL No. 20-13. Located near the west ¼ corner of section 5-31s-25e, the well has been strictly "no dope" from the grass roots on down.

Kern County Discovery

Approximately one mile northeast of the known producing limits of the Premier field, the Independent Exploration Co. has discovered a new producing area with the completion of Conoco No. 33. Located 1264 ft. south and 1316 ft. east from the northwest corner of section 33-27s-27e, the hole was bottomed in oil sand at the total depth of 2352 ft. and a string of 8⅝ inch casing cemented over the Etchegoin sand at 2270 ft. A 6⅝ inch perforated liner was landed at 2349 ft. and the hole bailed to remove the mud. After lowering the fluid only about a thousand ft. the well started to flow through the casing and was turned to the sump. After flowing by heads for several hours the production was estimated at 250 barrels per day. Several samples taken showed a gravity of 12.5 degrees with a cut of 20%. Tubing has now been run and the operator is preparing to place the well on production.

Honolulu Completes Buena Vista Well

Near the east ¼ corner of section 28-31s-23e, in the Buena Vista Hills field, the Honolulu Oil Corp. has completed Caribou No. 28-35. Bottomed at the total depth of 4383 ft. the well flowed initially at the rate of 254 barrels per day of 30 gravity oil cutting 3 percent mud and water, flowing through a 12/64 inch bean with 460 pounds tubing pressure and 640 pounds casing pressure. The bean was reduced to a 9/64 inch and the well is currently producing 233 barrels per day of oil and 100 MCF of gas. The hole was bottomed in shale at the total depth of 4383 ft. after finding the 27-B sand from 4297 ft. to 4362 ft. A combination string of 5½ inch casing including 83 ft. perforated was hung at 4380 ft. and cemented through perforations at 4292 ft. and at 3569 ft. East of this well the operator has location staked for Caribou No. 28-76, which will be drilled in the very near future.

Standard Completes Pleasant Valley Well

On the southwest flank of the Pleasant Valley field, the Standard Oil Co. has completed PVF No. 84-29F. Located near the east ¼ corner of section 29-20s-16e, the hole was bottomed in oil sand at the total depth of 9199 ft. A string of seven inch casing was cemented at 9051 ft. and a 5½ inch liner, including 150 ft. perforated landed at 9196 ft. The first 24 hr. gauge showed an initial production of 679 barrels of 28 gravity clean oil with a gross cut of 7.8 percent, flowing through a 24/64 inch bean with 200 pounds flow pressure and 500 MCF of gas. The well is currently flowing 340 barrels per day through a 12/64 inch bean.

Superior Testing

The Superior Oil Co. Houghton No. 47-35, is testing below the upper Stevens zone. Located in section

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
	Fresno County				
Cantua	Seaboard-Pure Oil Co.. Well	54-22	22, 16-13	1858	Drilling
Coalinga	The Texas Co., S. P.	58-21	21, 19-16	10558	Abandoned
Jacalitos	Standard Oil Co., Wells Fargo	1	30, 21-15	3361	Drilling
	Tide Water Assoc. Oil Co., Jacalitos	27-16	16, 21-15	3887	Reaming
	Kern County				
Ant Hill	Amerada Pet. Corp.,Ant Hill,S.P.	36-15	15, 29-29	2225	Bailing
Arvin	Continental Oil Co., Derby	1	35, 31-29	1534	Drilling
Cymric	Rothschild-Bender Sheep Springs	1	17, 29-21	3282	Abandoned
	Trico Oil and Gas Co., Trico	24-1	24, 29-21	1724	Abandoned
Devils Den	C.C.M.O. Co., Bates	2	20, 25-19		Rig
	DeKalb & Foster, Le Baron	5	24, 25-18	1315	Idle
Dyer Creek	Shell Oil Co., Inc., Glide	1	13, 26-27	2166	Abandoned
Gosford	T. W. A. Oil Co., KCL	44-22	22, 30-26	8152	Stdg. plugged
McKittrick	Americal Pet. Corp., Americal	1	2, 30-21	5450	Redrilling
	Richfield Oil Corp., Olig	2	12, 30-21	1333	Drilling
Lost Hills	Standard Oil Co., Cahn	58-4	4, 27-21		Location
McVan	Butler Bros., Well	2	14, 27-27		Grade
	Morrison, B. C.. Well	1	4, 27-27	3250	Drilling
Midway	C.C.M.O. Co., Well	G-3	20, 32-33		Rig
	Std. Oil Co., Ethel D. S.	1	36, 12-24	8356	Drilling
Mt. View	DiGiorgio Fruit Corp., Well	35-10	10, 31-29	6186	Abandoned
Poso Creek	Independent Expl. Co., Conoco	33	33, 27-27	2352	Flowing
Rio Bravo	Richfield Oil Corp., KCL-Goosloo	1	20, 29-25	10236	Abandoned
Rosedale	Western Gulf Oil Co., KCL-A	37-14	14, 29-26	9983	Drilling
Round Mt.	Bandini Pet. Co., Bishop-Mills	7	24, 28-28	1216	Drilling
	Signal Pet. Co., S. P.	2	25, 28-28	2650	Drilling
Semitropic	Standard Oil Co., Fullerton	1	25, 27-23	8712	Drilling
Shafter	T.W.A. Oil Co., Shafter Comm.	86A-7	7, 28-25	10146	Drilling
So. Belridge	Bandini Pet. Co., Bacon	1	27, 28-20	5352	Drilling
Strand	Standard Oil Co., Robbins	45-35	35, 29-26		Rigging up
	Superior Oil Co., Houghton	47-35	35, 29-26	8717	Completing
Stockdale	W.G.O. Co., KCL	77-5	5, 30-27	7784	Drilling
Sunset	T. W. A. Co., McBean	86-36	36, 12n-23w		Rig
Tejon	Reserve Oil and Gas Co., Well	33-7	33, 11-19		Foundation
	Richfield Oil Corp., S. P. 10	15-15	15, 11-19		Prep. to spud
Temblor	K & G Drilling Co., Well	2	25, 29-20	447	Drilling
Ten Section	Richfield Oil Corp., Old River-KCL	1	3, 31-26	8889	Drilling
	Kings County				
Alpaugh	Standard Oil Co. Von Glahn	1	34, 23-22	3086	Drilling
	Madera County				
Gill Ranch	The Texas Co., Gill	72S-19	19, 13-16		Rigging up
Firebaugh	The Texas Co., Moffat	47-1	1, 12s-14e	3996	Abandoned
	Merced County				
Los Banos	Shell Oil Co., Inc., Wolfsen	61-3	3, 9-11	4484	Abandoning
	San Luis Obispo County				
W. Midway	Richfield Oil Corp., Temblor Hills Unit	1-1	36, 31-21	1886	Drilling
	Tulare County				
Pixley	Barnsdall Oil Co., Lomdardi	1	16, 23-26	4223	Abandoned

35-29s-26e, the hole was bottomed in shale at the total depth of 8717 ft. after failing to find the expected second Stevens zone. The hole was plugged back and a string of 7⅝ inch casing cemented at 7168 ft. and cemented through perforations at 6744 ft. This casing has now been perforated from 6700 ft. to 6775 ft. and preparations are being made for a production test. Top of the upper Stevens zone was found at 6528 ft. This is the second well to be drilled in the company's recently discovered field southeast of Greeley.

Amerada Testing Ant Hill "Cat"

In the Ant Hill area of Kern county, the Amerada Pet. Corp. is testing Ant Hill-S.P. No. 36-15. Located in section 15-29s-29e, the hole was drilled into the Schist at 4095 ft. and bottomed in this formation at the total depth of 4159 ft. Side wall samples and the electric log showed the sands from 2180 ft. to 2210 ft. to be permeable enough for commercial production. A string of seven inch casing was cemented at 2170 ft. and several tests made of the interval from the shoe of the seven inch casing to 2210 ft. All tests recovered water with a trace of oil. The seven inch casing was pulled and the hole plugged to 576 ft. from where the well was redrilled to a new bottom at 2225 ft. A string of seven inch casing was cemented at 2180 ft. and a 5 inch liner including 44 ft. perforated landed at 2225 ft. The well is now being bailed with the recovery to date consisting of heavy oil and sand.

Adkisson Completes Midway Producer

In the Midway Sunset field northwest from the town of Taft, W. S. Adkisson has completed Gralan No. 8. Completed from the 33-B sand the well showed an initial production of 240 barrels per day of 29 gravity oil cutting less than one percent, flowing through an 18/64 inch bean with 730 pounds flow pressure. The gas production was gauged at 266 MCF per day. The well is currently flowing 330 barrels per day through a 16/64 inch bean with 665 pounds flow pressure, and making 280 MCF of gas. Located in section 4-32s-23e, the hole was bottomed in oil sand at the total depth of 4180 ft. A string of 6⅝ inch casing was cemented at 4150 ft. and a 5 inch liner including 35 ft. perforated landed at 4179 ft. The operator has the derrick built for Gralan No. 7R, approximately 460 ft. east from this well.

Deep Test Abandoned

East of the producing limits of the Northeast Coalinga Eocene field, The Texas Co. has abandoned S.P. No. 58-21. Located near the south ¼ corner of section 21-19s-16e, the hole was drilled and cored to a total depth of 10,558 ft. where the formation was Cretaceous Siltstone. A string of seven inch casing was cemented at 9490 ft. and the interval from 9364 ft. to 9515 ft. tested in several stages. The fluid recovered consisted of water with only slight traces of oil and small amounts of gas.

Ten Section "Cat" Sets Casing

Approximateiy one mile northeast of the easterly producing limits of the Ten Section field the Tide Water Assoc. Oil Co. is setting casing in KCL No. 44-22. Located near the center of section 22-30s-26e, the hole was bottomed in shale with streaks of gray sand and oil sand at the total depth of 8152 ft. A formation test of the Stevens zone from 7915 ft. to 8005 ft. recovered considerable 35 gravity oil and salt water. The hole has now been plugged to 8035 ft. and the operator is running a string of seven inch casing which will be gun perforated for production.

Richfield Spuds Tejon Outpost

Approximately three miles north of the recently discovered Tejon field, the Richfield Oil Corp. is drilling S.P. 10 No. 15-15. Located 330 ft. south and 330 ft. east from the west ¼ corner of section 15-11n-19w, the well will test the Santa Margarita formation in this area.

Have for lease or for sale 160 acres or more in Section 19, Township 32, Range 27, Kern County. Address inquiries to John Longwill, 201 Sansome St., San Francisco, Calif. Telephone Douglas 5855.

New PAW Orders

(*Continued from Page* 11)

that can be manufactured during a stipulated base period.

Highlights of the order are:

1. East of the Rocky Mountains (PAW Districts 1, 2, 3, and 4), the base period to be used in determining the quantity of premium gasoline, in relation to total gasoline, that a manufacturer can produce will be the six-months period from October 1, 1943 to April 1, 1944.

West of the Rocky Mountains (PAW District 5), the base period to be used in determining the quantity of premium gasoline that may be manufactured will be the five-months period from November 1, 1943 to April 1, 1944. October 1943 was eliminated from the base period used for the West Coast area because the PAW, to meet a localized military demand during that month, limited the manufacture of premium gasoline to 10 percent of the total civilian gasoline produced.

2. Manufacturers of gasoline are required to report on their operations during the base period and then each month on their operations under the new order.

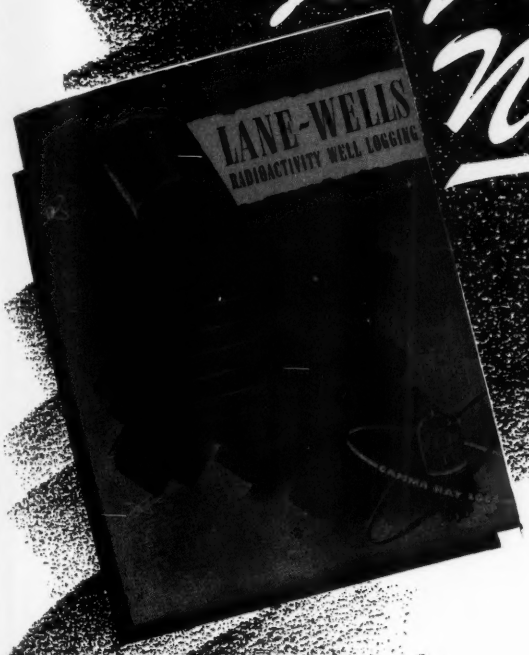
3. The order requires that each supplier shall apportion, as far as practicable, his available supply of premium motor fuel between trade areas on the same relative basis as that which prevailed during the base period.

Discussing the distribution features of the new order, Deputy Administrator Ralph K. Davies said:

"The new order contains provisions designed to assure an equitable distribution of premium gasoline among all those engaged in the marketing and distribution branch of the petroleum industry, so that all customers, in turn, will receive a fair portion of this product to meet their current rationed requirements.

"Discriminatory practices are banned; such as the imposition of special conditions not imposed on all other customers, or differentiation in deliveries between customers because of trade classification, affiliation, ownership, operation, control, or size; because of purchasing or selling methods; or because of accessibility of transportation facilities.

Get Your Copy of this New Lane-Wells Bulletin



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Here is the most complete story of Radioactivity Well Logging—Gamma Ray and Neutron Logs—ever published. Complete details of the Service, Equipment and Applications, together with typical and sample logs from Gulf Coast, Mid-Continent and California Fields are contained in its 52 pages. Copies are available on request. Simply fill in the coupon below.

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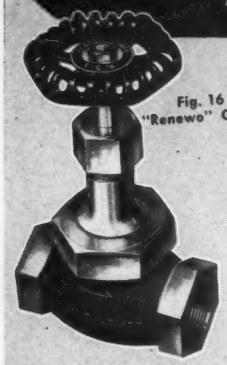
Fig. 16 "Renewo" Globe

Fig. 1640 "King-clip" Gate

Fig. 2125 Bronze Gate

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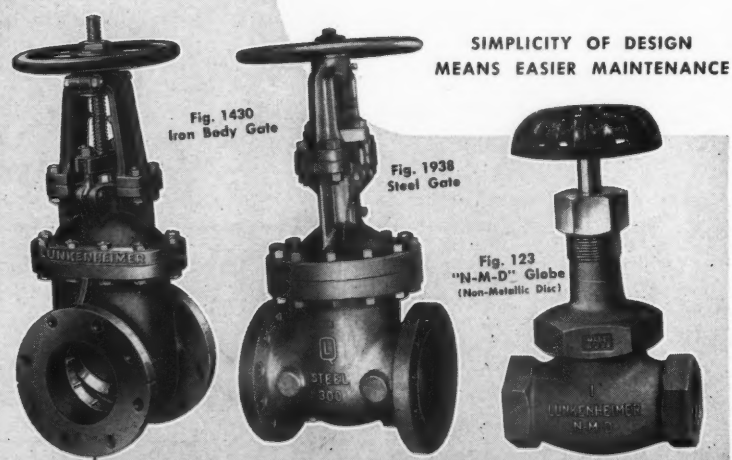


Fig. 1430 Iron Body Gate

Fig. 1938 Steel Gate

Fig. 123 "N-M-D" Globe (Non-Metallic Disc)

BRONZE, IRON, STEEL AND CORROSION RESISTANT ALLOY VALVES, 125 TO 2500 LB. S.P.; BOILER MOUNTINGS, LUBRICATING DEVICES, AIRCRAFT FITTINGS

(*Continuad from Page* 8)

barrels per acre foot," the statement declared. "By developing and withdrawing oil uniformly over the field and by utilizing the most advanced primary and secondary recovery methods, it is hoped that the greatest possible ultimate recovery of the oil in place will be obtained."

With the long battle over Elk Hills a thing of the past, Rear Adm. H. A. Stuart, Director of the Navy's Office of Petroleum Reserves, retired from active duty.

Well-known in Washington as a particularly faithful and zealous watchdog of the Navy's oil interests, Adm. Stuart chose an appropriate time — whether intentionally, or not—to end his long and distinguished active career. An ardent advocate of the Navy-Standard operating program, he came off the winner in a struggle that involved the Department of Justice; a large portion of the Nation's press; a formidable Congressional bloc and sundry and assorted individuals who would have liked to see an out-and-out condemnation suit against Standard's Elk Hills holdings.

Adm. Stuart is succeeded by Capt. William G. Greenman, another regular Navy officer and a former Inspector of Naval Petroleum Reserves in California.

While legislation seeking an overall increase in the price of crude oil was defeated before the Congressional recess, the familiar voice of the Independent Petroleum Association of America still is crying in the wilderness.

"Delay in granting a proper price increase merely adds to the size of the bill that must be paid," warned Russell B. Brown, the organization's general counsel.

Although admitting the hope is "perhaps a slender one," the tireless advocate of higher crude prices wistfully observed that the necessity for a general increase may yet be recognized "by the price control officials who have obtained their extension of life, under certain limitations not previously existing; such limitations may establish a basis for the procedures under which the case can be formally presented for the first time."

So. Calif. Meter Assn. Holds Annual Meeting

The Southern California Meter Association held its annual election of officers at the Rio Hondo Country Club on June 15, 1944. The officers as chosen by the nominating committee were unanimously elected.

The following are the members elected to the new board:

Officers—Mark McIlvaine, C. C. M. O. Company, President; C. L. Hutchings, Tide Water Associated Oil Co., Vice President; Lee Cheever, Southern Counties Gas Company, Treasurer; G. H. Forster, Texas Company, Secretary.

Chairmen of Committees—Curtis G. Cortelyou, General Petroleum Corp., Programs; Gordon Greene, Robinson Orifice Fitting Co., Entertainment; Melroy Welsh, Barnsdall Oil Company, By-Laws; E. P. Valby, Richfield Oil Corporation, Standards; H. F. Keans, Union Oil Company, Membership; R. N. Christensen, Southern Calif. Gas Company, Publicity.

Past President—J. T. Cortelyou, Southern Calif. Gas Company.

San Joaquin Valley Chairman of Committees—R. T. Furlong, Texas Company.

The next, regular monthly meeting of the Association will be held at the Rio Hondo Country Club, Downey, at 6:30 P.M., Thursday, July 20, 1944. A paper entitled "Review of the Southern California Meter Association Meter Course, Publication No. 17" will be given by Mr. J. T. Cortelyou, of the Southern Calif. Gas Company.

This meeting has been designated as "Ladies' Night," and all ladies interested in measurement are invited to attend. The paper to be given by Mr. Cortelyou will review all of the papers presented during the past year, covering the fundamentals of the various phases of gas measurement. Because this review will present the fundamentals of metering without all the technical details, the ladies who are now working in this field of endeavour to aid the man-power shortage are urged to attend, with the thought that they will receive a general background of the subject which will make their work more interesting.

In addition to the foregoing paper, a quiz program will be presented along the lines of "Information Please." A board of experts composed of Jack Cortelyou, Southern California Gas Company; Larry Cowan, Union Oil Company, Melroy Welsh, Barnsdall Oil Company; and Curtis Cortelyou, General Petroleum Corp. will answer the questions. Members and guests are requested to present difficult questions and problems which they wish to be solved to this board of experts. If the board fails to answer the question, the one submitting it will receive a ticket entitling him to a free drink at the bar. The questions asked should have a direct bearing on the meter course as presented by the Association during the past year.

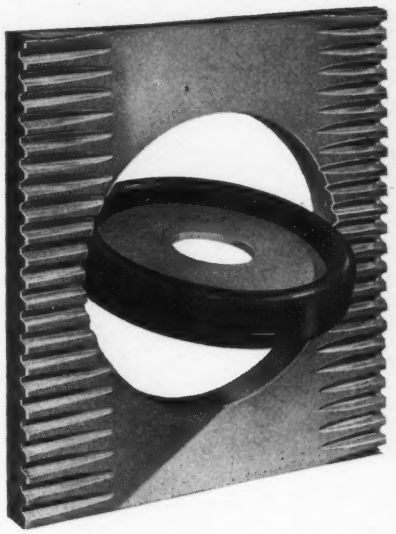
This should be a very interesting meeting and all those interested in measurement are urged to attend.

Tubbs Cordage Company Executive Returns from Duties with W.P.B.

Since early in 1942, Herman D. Nichols, vice president of Tubbs Cordage Company, has been on duty in Washington, D. C. as Hard Fiber Consultant and Chief of the Agricultural Products Branch of the Conservation Division. For the past two years, he has been a leading factor in the magnificent nationwide campaign that has been carried on by the country's cordage manufacturers for the conservation of hard fiber and rope.

Back again at his desk at 200 Bush Street, San Francisco, Nichols will take over an important part in Tubbs Cordage Company postwar planning. His two years in Washington, closely attuned to the war effort in assuring ample cordage supplies for the armed forces and for the needs of vital industry, have aided the cordage industry in successfully passing this important crisis. However, according to Nichols, this does not mean that the campaign for rope conservation should be relaxed. While the climax has been successfully passed, drastic manpower shortages still make the production of rope one of America's acute industries. Everyone should do everything possible to conserve the present supply and replace only when necessary.

Positive Seal Orifice Plates



After more than a year of field testing Daniel's latest and finest contribution to Orifice Metering accuracy is now available to the trade. Daniel Positive Seal Orifice Plate incorporates the latest in Synthetic Rubber developments. The orifice plate is encircled in a special rubber sealing ring eliminating completely the old type of metal to metal seal. This latest development provides advantages never before available in orifice fittings. Positive seal in both directions; Reverse flow metering when desired; Plate is accurately centered in line; The rubber ring protects the plate from scratches and scuffing; Plate is more readily accessible; Can be used as a line or manifold blind; More suitable for corrosive conditions than most metals; Permits the use of any suitable material for special conditions such as glass, plastic, etc., as plate is cushioned against shock.

Rosedale Deep Test

In the Rosedale area of Kern county, the Western Gulf Oil Corp. KCL No. A-37-14, is drilling ahead and taking spot cores of hard shale below 10,000 ft. Located east of the southerly tip of the Greeley field in section 14-29s-26e, the hole is being drilled to test the Vedder sand and the operator reports that the well may be carried on to the basement.

How to Control a "Traveling Wave"

The almost universal acceptance of the Patterson-Ballagh Wire Line Guide by the oil industry indicates that this method of guiding the wire line onto the drum fills an urgent need.

The basic operating principle of this device is that a freely hanging, heavy, rubber-lined cylinder will damper the whip and iron out the "traveling wave." The rubber lining, in sections 8" long and 5" in diameter of Patterson-Ballagh seamless PBX rubber, is grooved internally to hold the lubricant. They are the only wearing part and are easily replaceable when worn.

By stabilizing the lines with Patterson-Ballagh Wire Line Guides, fatigue, corrosion, kinks, strand separation and surface wear are minimized. Drilling and wire line speeds can be increased—the life of the line being extended from 10% to 50%.

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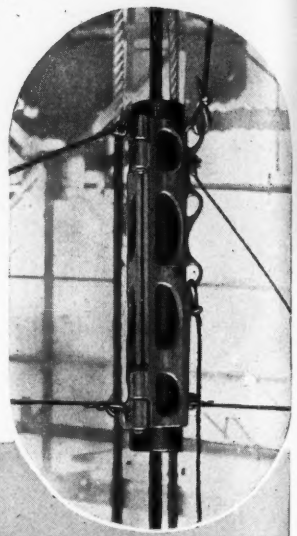

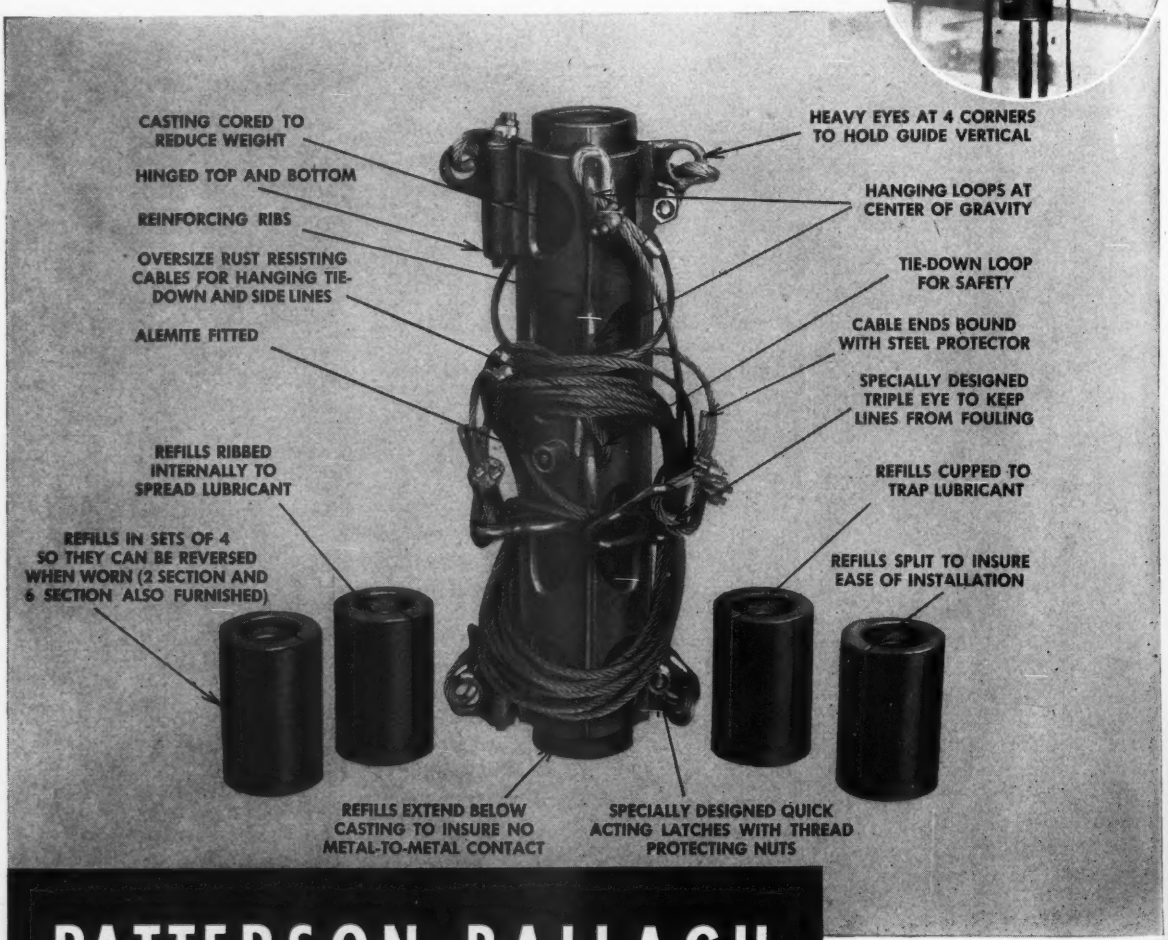
CASTING CORED TO REDUCE WEIGHT
HINGED TOP AND BOTTOM
REINFORCING RIBS
OVERSIZE RUST RESISTING CABLES FOR HANGING TIE-DOWN AND SIDE LINES
ALEMITE FITTED
REFILLS RIBBED INTERNALLY TO SPREAD LUBRICANT
REFILLS IN SETS OF 4 SO THEY CAN BE REVERSED WHEN WORN (2 SECTION AND 6 SECTION ALSO FURNISHED)
REFILLS EXTEND BELOW CASTING TO INSURE NO METAL-TO-METAL CONTACT
SPECIALLY DESIGNED QUICK ACTING LATCHES WITH THREAD PROTECTING NUTS
HEAVY EYES AT 4 CORNERS TO HOLD GUIDE VERTICAL
HANGING LOOPS AT CENTER OF GRAVITY
TIE-DOWN LOOP FOR SAFETY
CABLE ENDS BOUND WITH STEEL PROTECTOR
SPECIALLY DESIGNED TRIPLE EYE TO KEEP LINES FROM FOULING
REFILLS CUPPED TO TRAP LUBRICANT
REFILLS SPLIT TO INSURE EASE OF INSTALLATION

PATTERSON-BALLAGH WIRE LINE GUIDES

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